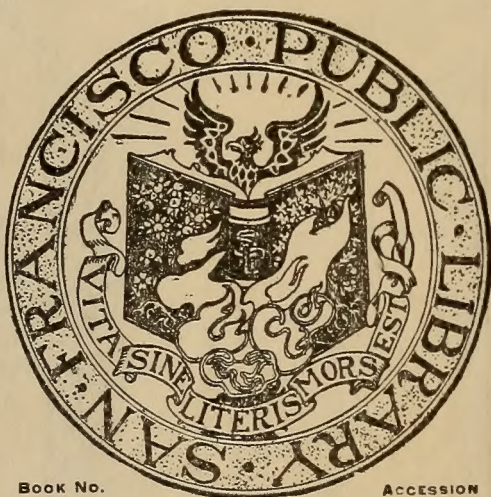


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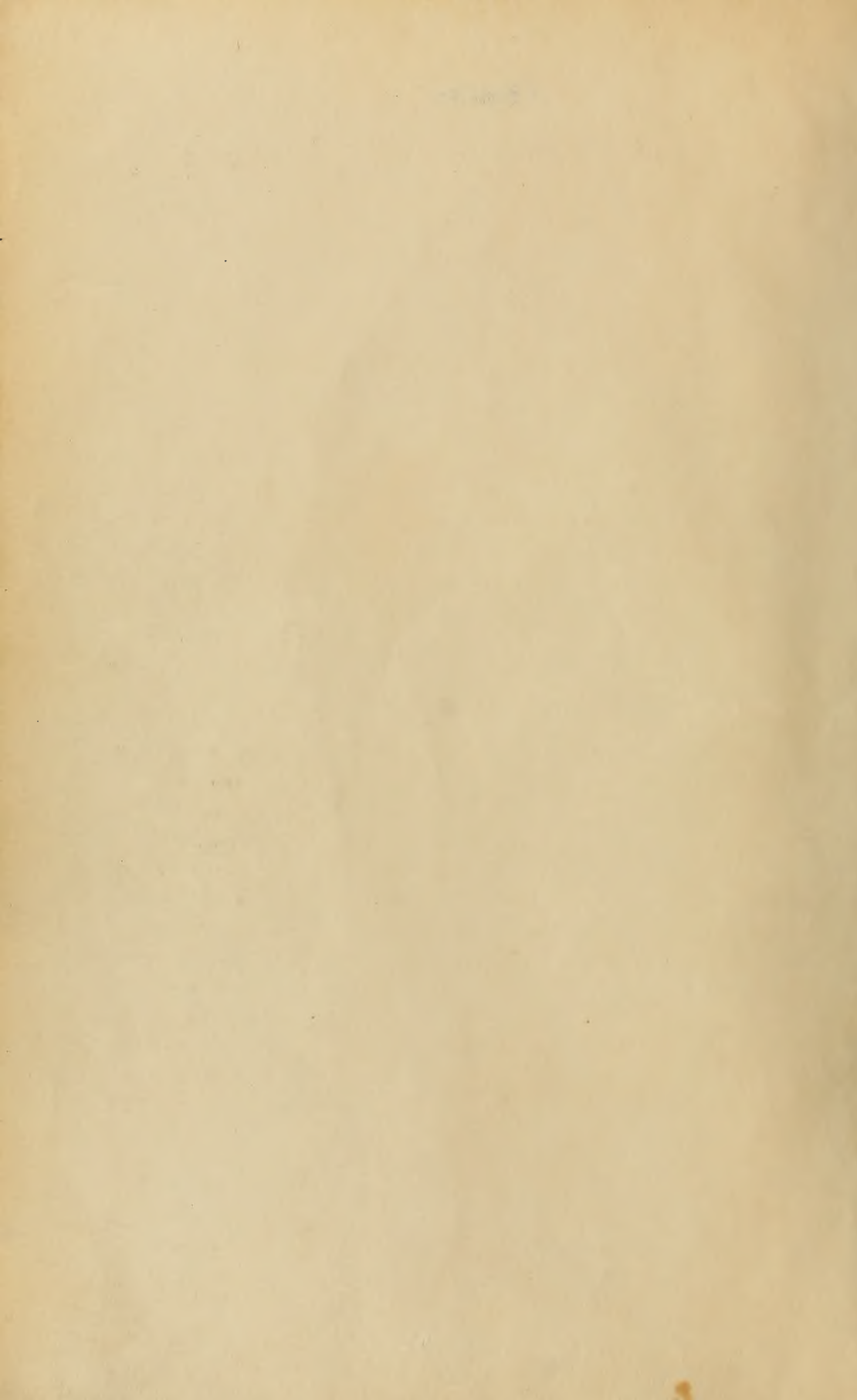
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CAMERA CRAFT

A Photographic Monthly

George Allen Young, Editor

Volume XLIII January to December, 1936

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"Galatea"

19th Los Angeles International Salon

Dorothy Wilding

Steichen

Nicholas Haz

"STEICHEN"; if there is a more glamorous name in photography I have never heard it. What an opportunity for a writer to do a rousing article about the uphill fight of a young, poor boy to achieve the highest position in photography. To trace the progress of this long enduring effort, which even now, after 40 years of unflagging work is on the lookout for new spheres for photography. What an inviting task, to tell about the philosophy and the deeply interesting incidents of the life of this man; and to characterize the times which made his career possible. Yes a grand chance for a *writer*, but far too exacting a task for a mere picture-maker who also writes. Fortunately the problem has been solved already by Carl Sandburg, who in his book "Steichen the Photographer" gave us the most outstanding biography of a photographer.

All I can do is to give a more or less pedestrian account of the technique of Steichen and to recollect some of his sayings and doings, which I have been fortunate enough to hear and to observe while visiting in his studio from time to time.

Steichen was a rising master of painting when he foresaw the machine age in picture-making. He knew, even when the Musée de Luxembourg of Paris bought his paintings, that soon the camera would supersede the brush as a means of moulding the public mind. At a time when any suggestion that photography might be considered an art brought scorn upon the suggestor, he laid aside his triumphant palette to be a photographer forever after.

He built a three-day bonfire with his paintings and when that fire went out he was done with his painters past, and also with pictorialism in photography.

And who was a better pictorialist than Steichen? Who could emulate the effects of paint on canvas more successfully than he by means of photography? No one. His giant multitone gumprints, now in the Metropolitan Museum of Art of New York, could be hung in an exhibition of paintings without any danger that they would be out of harmony with the paintings. He could emulate anyones technique if he so chose. He could do a Whistler or a Sargent or a Corot or a Lenbach at will. But soon he realized that there is no sense in imitation, particularly not if the imitator's means are as good as those of the imitated. To be called a pic-

torialist is an insult to a photographer he holds, just as the designation "photographicalist" would be resented by a painter.

He was ever in favor of direct, honest, undisguised workmanship in any art and craft. He cannot prefer marble made of chicken-wire, burlap, plaster and paint to real marble, although he has respect for chickenwire and the other materials if they are used in their proper places.

When he knew that his work would be, exclusively, photography, he undertook a thorough study of technique. He undertook a second rigorous apprenticeship as he wanted to find a simple, direct and efficient way to record his emotions and ideas by means of photography. To begin with he photographed a cup and saucer one thousand times on all sorts of photographic plates, treated in many ways and printed on all kinds of papers.

When he was done with experimenting, (for the time being only, of course, because he is experimenting all the time), he decided on panchromatic cut-film, developed in pure metol—in tanks. They were desensitized in Pinacryptol Green, either previously (in a continuous solution of the dye), or else he added the dye to the developer. Of late these formulas are being changed, since he is making direct-color photographs and the negatives need to be adjusted to the color-requirements. He likes the pure metol for black-and-white because all of the image comes up immediately and he can watch the progress in density to the exact point needed. His average printing quality for negatives is much more dense than that of the customary studio.

Since Steichen does all his thinking before he exposes his film, he needs almost no control when printing. There is no retouching or worked-in backgrounds, nothing sketched or painted or airbrushed on his negatives. Nor does he use etching or line screens, grainy or any other sort of paper negative, nor does he diffuse his images while printing. Not even his photomontages show any trace of work by hand. He is thoroughly convinced of the value of purism in photography.

He uses an 8 by 10 Eastman studio camera with a specially built-in rising and falling front, and a Folmer 8 by 10 commercial camera for work outside of the studio. Then he has an Anco 5 by 7 view-camera for outdoors. Of late he has used the Rolleiflex extensively and he always carries with him a Bantam Kodak, which he considers the best camera for the amateur snapshooter. His favorite lenses are the Dagor and the Protar or their types. For the last five years the Schneider Symmar has also been in favor with him. He has a number of these lenses of different focal lengths. The one kind of lens never found in his studio is the soft-focus type. He started the vogue of soft-focus photography in this country about the year 1900 by simply kicking the tripod during exposure or wetting the lens. From such humble beginnings started the great industry of soft-focus lens manufacture and that of the many different diffusing devices. He is sorry they were such a success. You can always make him smile when you tell him that someone paid a small fortune for a sharp lens then put a diffuser in front of it. One of the great advantages of photography is that the lens is a better optical instrument than the eye, "sees" more of the world, than humans; makes more thorough pictures than what we can see with the naked eye. Why should one resign such a grand advantage; where is the law which obliges one to match human vision in photography?



"Self Portrait"

Edward Steichen

Courtesy Vanity Fair

His studio was and is quite simple. In spite of the fact that he is making many elaborate fashion pictures and advertising illustrations, there are no built-in sets, no profusion of properties. Anything needed in the pictures is brought in for the occasion.

The standard equipment of the studio consists mostly of lamps of all sorts and of panels from which he composes most of his backgrounds. Painted backdrops or cast-shadows to suggest scenery he has never used. Sometimes he goes to mansions, apartments, ships, night clubs, theaters, ball rooms, flying fields, offices, gardens, churches, or other characteristic places to suit the atmosphere to his subject.

He was the chief of aerial photography of the American forces during the world war. He became one of the pioneers of this fascinating branch of photography, in which he still is enthusiastically interested. He is a colonel in the army, an officer of the Legion of Honor of France, and the possessor of other decorations and honors.

His favorite subject-matter is anything at all. From a tooth brush to Greta Garbo or the Rocky Mountains, there is nothing he does not like to make a picture of. These may be abstract, or concrete or semi-abstract; not so much in the hyper-modern speculative manner of Bruguire or Man Ray, but made instinctively, naturally. He likes clean-cut facts more than nebulous theory, there is nothing mystic nor fantastic about him. But if others choose to make super-intellectual photograms, they can count on his sympathetic attention. He always favors new departures over trite repetitions of the obvious.

He likes all branches of photography but one, that of the average family portrait photographer, who has to flatter his sitters to make a living. He will not accept portrait sittings for the benefit of friends or relatives of the sitters.

The news photographers' work he thinks admirable. He considers the American press-photographer the liveliest, most original of his kind. Scientific photography he champions to the utmost; astronomical photography, ultra-speed photography and photomicrography are fascinating to him.

He pays small heed to the limiting rules of traditional picture makers, he makes his own rules. Accordingly he will photograph one single simple object or a million complicated ones. He will juxtapose the smallest to the largest image if this will express whatever he has in mind. He will upset the rules of perspective if this helps to bring out a specific idea.

He puts his most impressive image into the center of the print as readily as near the edges or into the corners, but that does not mean that he won't use the orthodox off-center positions if he thinks that they will be the best for the job in hand. Once at least, he has put the center of interest out of the picture. He photographed himself, crouching in the lower left corner of the print looking out of the picture at his sitter. This certainly was a breach of an old fogie rule not to lead the eye out of the picture, but he succeeded in making a most unconventional and effective self-portrait.

He rarely distorts an image, but he does not mind if others do. He uses his tiltin tripod head often; to point his lens up or down is an old story to him. Weichen is always on the lookout for a novel, unexpected appearance of the object. Of course he is delighted with subject-matter which no one has touched before, and when he has to photograph the obvious, he tries



Courtesy Vogue

Edward Steichen

to find a new mode of presentation; a different aspect of the familiar object.

Steichen is careful about line composition. He does not design it in advance, but builds it when looking at the ground-glass. He changes positions, accessories, backgrounds, lighting effects till that invisible line is properly formed. This does not necessarily contain the line of beauty of Hogarth; at times he makes it out of straight lines, parallel to each other and to the edges of the print.

When he subdivides his picture plane he does not shun the tabooed fifty-fifty, sometimes he has a regular square net for a foundation, particularly in his photographic fabric designs.

Steichen's tone is usually a full scale richly graded symphony of greys, between white and black. He makes high key and low key pictures but I don't remember any harsh soot-and-whitewash effects by him. He always uses supersensitive panchromatic films because of their speed. Sometimes he intentionally overcorrects and of late he has done infra-red photography.

Steichen made the first Lumiere Autochrome color-plates used out of the factory. Since then he has experimented with almost all direct color techniques. At this time he is using the one-shot three-color separation process, on eight by ten plates or films at high speed and small stops of the lens. This of course demands very strong illumination by lamps or flashbulbs.

He initiated the present vogue of direct-color photographic illustration in magazines with a picture of Peggy Hopkins Joyce in 1931. The first action snapshot in full color, indoors, is also by him, made in 1933 of Harriet Hctor. He expects this technique to stay with us, especially if someone will invent a way to make the color engravers work purely photographic and not mainly handwork as it is at present.

Steichen's ideal of edge-definition is full depth-of-focus plus perfect sharpness all over. He might sacrifice depth-of-focus or even sharpness if he cannot catch an expression or attitude without sacrificing them.

He never uses rough surfaces for his prints. His favorites are semi-matt smooth surfaces, without particular objection to glossy effects. Plasticity and distance are great assets in pictures he holds. He will turn out a silhouette once in a great while, but generally his work shows volume. His photographed patterns show little distance, but much plasticity.

Surface, distance and plasticity, plus sharp definition, give good textural rendition. He is quite keen for this quality. You cannot please him with mushy, muddy or wishywashy effects, or slurred, untrue representation of texture. He admires plenty of action in pictures. He pictures liveliness when needed, but he also can show dignity, saintliness, or repose. But whatever he does there is always a feeling of life about his figures. Nothing is ever dead in a Steichen print.

He does not believe that long duration can be shown in a single non-composite print. He never tries to represent an epoch of his sitter's life; all he is after is "that person at that time and place."

In composite pictures it is different. In his mural in the Center Theatre he covered the history of aviation from the first biplane of the Wright brothers to Captain Stevens' camera. When he makes a photo-montage he includes negatives used as positives, lettering, maps, blueprints, in short any sign or symbol to make the meaning of the picture clear.

He sometimes represents the eternal in a single shot. A frog in a pond.



"H. G. Wells"

Edward Steichen

Courtesy Vanity Fair

among leaves of water lilies, changes into a prehistoric monster if you look at the picture long enough.

There is never an unbalanced picture in Steichen's work, but he has many means of balancing. From the static symmetry of archaic painters to his carefully calculated adjustment of weight and interest he can handle anything.

Nor do his pictures disintegrate, no matter how long one looks at them. When he unites them they are united. But sometimes he uses intentional disunity to accentuate sequence of ideas in his pictures. This applies only to the murals, single pictures are coherent if Steichen made them.

Nor is there a lack of clarity in his work, if he intends to make them understandable. And no picture of his ever collapses because the images merge into one another. But if he decides that he is going to puzzle you, then you won't solve his puzzle in a hurry.

He knows how to force the onlookers to notice that image first which he selected to be the main image. An unimportant extra is never allowed to overshadow the star in his composition. If he wants to direct your attention to a hidden image, you will find it unless you are a habitual slipshod observer.

He is the initiator of the use of even and regularly alternated rhythm in photography, at least in this country. He uses these rhythms in his celebrated pattern designs, by photographing sugar cubes, moth balls, tacks, and the like in an ornamental lay-out, seen vertically from above. They are used as fabric designs for silks. Of late they can be printed on the fabric photographically, in the beginning they had to be adjusted by sketches to be made printable.

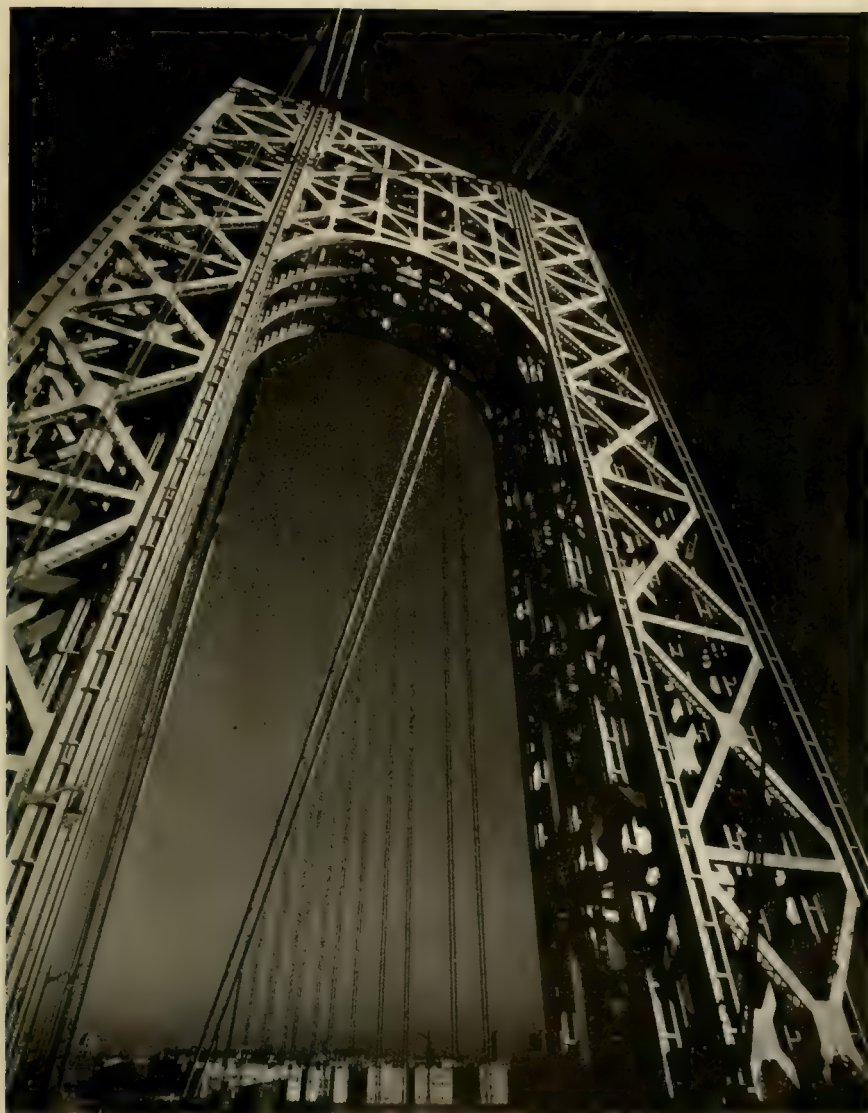
He never photographs ugly, repulsive objects, but he is capable of admiring those who do; if the makers have a socially useful aim in mind when they do it. For instance when a devildare newspaper photographer snapped Mrs. Snyder on the electric chair, Steichen exhibited a clipping of this in his reception room. He considered it a photographic editorial against capital punishment. He likes and praises the work of Dorothea Lange and Ben Shahn, who often photograph abject poverty, lonesome old age in the slums, and the like.

His admiration for Captain Stevens' photographic work is exceedingly great, some of the captains infra-red long-distance shots remind him of the first chapter of Genesis, he says. Stroboscopic photography by Edgerton and Gernsheim is also among his favorites.

"Follow your own nose" is his advice to the beginner. "Look with your own eyes, photograph what *you* see, don't try to imitate anyone's work."

He does not like to be called an artist. One of the former presidents of this country dedicated a print of himself by Steichen to him with an "To the artist." That print was not long on the mantel piece.

He thinks that Charley Chaplin is not only a genius as an actor but is also one of the best photographers in the world. At the same time, curiously, he is the most camera shy subject who ever stood in front of his camera. For Walt Disney he has unbounded admiration. (The writer is in full agreement, he thinks these two would be named the most beloved living humans in a world-wide referendum.)



"George Washington Bridge"

Edward Steichen

Courtesy Vanity Fair

He has met more celebrated men and women in his studio than any photographer in this country and perhaps in the world. The procession of beautiful women to his studio never stops. His recollection of famous personalities would make excellent reading.

Occasionally he works himself near a nervous breakdown. Then he goes to Florida or California for a few weeks, comes back hale and hearty for another long stretch of exceedingly hard work.

After forty years of intensive work in photography he still changes his mind easily. Ten years ago he did not respect the small cameras. Today he uses them, and thinks that they stand as the highest technical advance in tools for the photographer. The studio men have to get along with about the same equipment they had 20 years ago.

He is a believer in the movies and agrees with H. G. Wells that they represent the most vivid art-form in the world today. They have stolen the thunder not only from the painter and illustrator, the stage, the writer, the musician, and newspaperman, but from the clergy and politicians. He follows the work of the great directors and cameramen and has great respect for our best as well as the pre-Hitler Germans and Russians, past and present.

He finds time (a miracle,) to be interested in lots of things beside photography. He bought the famous Brancusi sculpture: "Bird in Flight" when it was brought here. The customs house officials had decided that this was not a work of art and tried to collect some duty on the copper it was made of. Steichen went to court about it and squelched the customs men.

He serves as juror for salons and competitions, he selects prints for annuals, advises beginners, lectures and broadcasts, writes on photography, helps innovators and inventors of new photographic materials and devices, and does all this free of charge.

But he does not donate his work to the magazines and advertisers who use it. He made three-cipher prices for single photographic prints of his a rule in this country.

He is a man of simple habits, not a fancy dresser, who hangs on to only one characteristic piece of apparel, a broad brimmed black Stetson, with a definite "personality."

His favorite hobby is plant breeding, being the owner of a farm in Connecticut on which he breeds and raises new types and forms of flowers. Also in horticulture he is an innovator, a finder of new paths, a creator of new things.

He can be equanimous among circumstances which would try the patience not only of artists but of truckdrivers. Once there was a flood on the floor above his studio. While the neighbors ran around trying to stop the rain from the ceilings, he went to bed with an umbrella over him.

He thinks that the greatest advances in photographic technique of the last few years are the supersensitive panchromatic emulsion, and the electric actinometer. He admits a great advance in enlarging technique, and now occasionally enlarges. Up to ten years ago he only made contact prints. In murals the greater the ratio of enlargement the more he likes them.

In my mind America is leading the world in many branches of photography. No other country can compete with our moving picture technique, our animated cartooning, nor indeed with our advertising and color still



"Fabric Design"

Edward Steichen

photography. Steichen was ever a leader in these last two directions, as he was the leader in pictorialism before he renounced it.

He is as energetic, lively and ambitious today as he was 30 years ago. He does not contemplate resting on his laurels, he will go on and lead us to ever higher peaks in photography.

My First Ten Weeks

With A Contax

Ansel Adams

VARIETY is the spice of life and of art as well. Not a superficial variety, but a deep, compelling, change of view-point. The one thing that must not alter is the fundamental integrity of art expression. A great living example is the painter Picasso; he has explored many recesses of his genius, and given the world surprising and stimulating experiences of magnificent painting and drawing. He is a *seeker*, not one who restates his own work or the work of his contemporaries. Through all his production leads the thread of perfection and power. Stieglitz and Weston have clearly shown that photographers can combine versatility and consistent high standards. It is good for all photographers, Purists and Pictorialists, to think of photography in this way; to realize that it is, like all mediums of art, capable of rich and inclusive expression in direct relation to the ability and vision of the photographers.

Yet, no matter how competent and extensive any photographic work may be, the final arbiter, taste, must control. Taste conditions the ultimate merit of any creative work. The Purist objects to certain types of photography not because the appearance thereof differs from the work of his choice, but because the element of Taste—of subtle understanding of the powers of the medium, and the application of these powers to a rich art-expression—is so often lacking.

I was fearful, up to less than a year ago, of the effect of the facile miniature camera on the art of photography. I had seen nothing worth-while, but I had seen a great amount of very bad work, I had listened to impossible claims, and I had sensed the "hobby" quality dominating to an alarming degree. Increased facility often progressively eliminates *effort*, and things in art are accomplished only through accumulated effort and practice and the clear knowledge of the objectives in view.

However, not very long ago I experienced the pleasure of seeing some really fine work with the Miniature camera—notably that of Peter Stackpole. The prints were direct, clean and precise, and they had something



"White Pass, Sierra Club 1935"

Ansel Adams

Zeiss Contax Negative; 5x enlargement; 50 mm Tessar; F8 1/100 sec. Sun-light; light yellow filter (Zeiss); Panatomic Film in D.K. 76; P.M.C. #10, in Amidol.



"Hannes Schroll, in Action, Yosemite"

Ansel Adams

Zeiss Contax Negative; 12x enlargement; 40 mm Biotar; F4, 1/1000 sec.; sunlight; Pantomic Film in D.K. 76, P.M.C. #10, in Amidol.

alive and vital besides. In other words, they were exceedingly good photographs. I saw the handwriting on the wall—the indication of a powerful new field of photographic expression—and I capitulated to a Zeiss Contax with Tessar F 3.5.

I started on a month's trip in the Sierra with a 4 x 5 Graphic and the Contax. I made a great many exposures with the latter (I justify the number by calling them "experiments"), and not so many as usual with the Graphic. The Contax "took" things perfectly—everything from clouds to water-bubbles, people, mules, rocks, and flowers. I returned to my dark-room in a state of jubilant expectancy; tried a dozen different developers on more than two dozen rolls of film, and emerged with considerable mileage of squirmy celluloid. Net result: some fine pictures and the realization of an immense new world of photography to explore, aesthetically and technically, and in relation to human significances. The latter is undoubtedly the most important field for the miniature camera—the camera is for life and for people, the swift and intense moments of existence. These are perhaps the most precious revelations after all.

Since this first orgy I have been working constantly with the Contax. I have an enormous amount to learn of the minutiae of operation and processing, to say nothing of the experience in perception of new subject material. My main technical objective has been to match the photographic



"Hannes Schroll, Director, Yosemite Ski School"

Ansel Adams

Zeiss Contax Negative; 13x enlargement; 50 mm Tessar; F5.6, 1/200 sec.; sunlight; Pantomic Film in D.K. 76; P.M.C. #10, in Amidol.

qualities of Miniature Camera work with that of the production of large cameras in relation to tone values, clarity, and precision. My main aesthetic objective has been to find the "rightness" of subject in relation to the apparatus; not to imitate the production of larger cameras, but to speak in the specific language of the medium employed, or, rather, in a particular dialect of the language of photography.

As in all branches of photography, the technical discussions and determinations seldom are based on aesthetic requirements. The problem of negative grain seems to be a real boggy to most miniature camera workers. My personal opinion at present is that I would rather have richness of tonal values and a *little* grain than *no* grain and an unsatisfactory tonal quality. My best work has been done with Panatomic film and the DK-76 developer (with a little potassium bromide added). The results are far ahead of anything I have secured with the Paraphenylene-diamine formulas except in special cases. I see no objection to Grain provided that the dimension of the average grain particle-image is less than the disc of confusion of the optical image. If the lens definition is *finer* than the granularity the resultant effect is one of coarseness and is to be avoided. If the conditions are reversed, however, and the granularity is finer than the lens definition, the resultant effect is one of *apparent* increased definition: the large disc of con-



"Snow Plow—Yosemite"

Ansel Adams

Zeiss Contax Negative; 10x enlargement; 40 mm Biotar; F:4, 1/500 sec.; sunlight; Panatomic Film in D.K. 76; P.M.C. #10, in Amidol.

fusion of the lens image is broken up into sharp points of tone. Grain, in itself, is the basis of the photographic image; when the degree of visible grain is in proper relationship with the degree of resolution of the lens image, the effect is quite logical and very beautiful. Visible grain in a contact print would be most unpleasant; in a 15x or 20x enlargement it is another matter.

I find that Paraphenylene-diamine developers work better with subjects of relatively low contrast (with sufficient exposure, of course) than they do with subjects of relatively high contrast. I look forward to experimentation with the new Eastman Ultra fine grain developer, but I regret the required increase of exposure. The diversity of opinion on the matter of development of miniature camera negatives is astonishing and very disturbing to anyone who seeks a constant and dependable procedure. For the present, I am restricting myself to the D.K. 76 formulae with 50 gr. Pot. Bromide per gallon added. This gives most excellent quality with Panatomic film.

I use PMC No. 10 (Glossy) Bromide papers and Amidol developer. I prefer a dilution of $\frac{1}{4}$ oz. Amidol to 64-96 ounces of Sodium Sulphite solution. Using a Condenser enlarger produces prints of slightly higher contrast than the contrast obtained with a diffuse Mercury vapor illumination.

Very often, when the room humidity is above normal, the appearance of "Newton's Rings" can be most exasperating. This is a phenomena of



"Baby Portrait"

Ansel Adams

Zeiss Contax Negative; 15x enlargement; 50 mm Tessar; F:3.5, 1/25 sec., indoor (window) light; Panatomic film in D.K. 76; P.M.C. #10 developed in Amidol.

light-interference, producing vague markings on the print reminiscent of the prismatic irregularities of a thin oil-film on water. It is caused by slight traces of moisture between the negative and the glass of the negative carrier in the enlarger when negative and glass are in contact. The use of a tension carrier eliminates the rings, but I prefer the negative to be held secure and flat between glass. I avoid the rings by the following procedure:

1. I use a paper mask with the film between the glasses.
2. I very carefully dust off the film and then rub very lightly the *plain* side with the ball of the finger which has picked up a little oil from the hair of the head by being rubbed thereon. This sounds rather peculiar but it works to perfection. After the plain side of the film (and the glass in contact therewith) have been gently treated in this way, both are *gently* brushed off with a clean camel's hair brush. Never touch the emulsion side of the negative with the fingers.

I find that care and precision in operation and processing is absolutely essential to perfect results. Be sure the camera is completely free of dust, and the lens as well. Remember that the miniature camera lens is an extraordinary piece of fine craftsmanship; it must be handled and cleaned with the utmost of care. Keep all tanks, etc. very clean and dry films in a clean

dustless room. File negatives so that they will be well protected from rough handling, heat and dust.

I selected my equipment with confidence in its accuracy and dependability. My equipment at present is:

Zeiss Contax camera, with slow shutter speeds, universal finder, lens shade, cable release, lens caps and case. Lenses; the Zeiss Biotar 40mm. F:2, Tessar 50 mm. F: 3.5, and Sonnar 135 mm. F:4. Zeiss Contax enlarger.

IT IS VERY IMPORTANT THAT THE PROPER CONDENSER ENLARGER IS USED.

The temptation to get everything made for the miniature cameras is compelling indeed, but I am sure that limiting one's equipment to those things which are truly necessary is best in the long run. I hope to add to my equipment *as I need to*. The gadget complex can be a very distracting affliction.

In conclusion, I feel that so much of Miniature camera photography is unacceptable to the serious worker through lack of high standards on the part of miniature camera photographers. This goes for all kinds of photography as well as Miniature. The miniature cameras will "deliver the goods"—perfection—if the abilities of the operators are equal to their equipment. The few illustrations that accompany this article are in no way intended to represent my conception of what Miniature Camera photography should be; it would be unfair to the camera to suggest that they are typical of what I know are the camera's possibilities. I know I shall be able to do things infinitely better than these pictures in the future when I have more fully grasped the capacities of the instrument. These pictures are presented only as indicative of the direction I anticipate following in the miniature camera field.

Painting It Out With Oil

Paul H. Jamieson

THE picture worker may regard the various methods of altering the photographic image either as a plague or a pleasure but it is a universal photographic experience that occasional imperfections appear which must be removed by hand work on the picture surface. Even those who refrain from the laying on of unholy hands upon the sacred silver image so mysteriously graven by lens and light may yet find a negative scratch or spot which must be removed by some method of retouching.

In recent years the development of miniature photography has brought

to the front new problems for the photographer one of which is that the negatives used are too small for alteration by localized hand work. Therefore a method whereby a satisfactory retouching may be done directly on the print has become increasingly desirable.

It was the lure of the low cost negative and the short focus lens which first induced me to make enlargements from negatives so small that retouching on the negative was impossible. The fatal urge to expand into the somewhat larger field of pictorial control, led me into the exploration of methods for removing parts of the photographic image.

For personal use I was forced to give scant consideration to the methods which did not provide a way of making changes on the original prints for often all that was wanted was to remove a few blemishes or brighten a few highlights. Perhaps it was a lack of ambition which caused me to avoid such methods as the Bromoil process etc.

I also quickly concluded, that in hands such as my own, razor blades were better for scraping real chins than for improving photographic complexions. So, I turned to the use of some of the published formulas for local reduction by chemical means.

I was overcome with mixed mirth and mortification at my first attempts at local reduction on a photograph with chemicals. In fact I am filled with many stages of amplified astonishment recalling that the whole thing was started to "save time." Instead, about three years have been spent in working on the problems involved and the business of taking photographs has perished.

During the experimental work, certain factors were found to be vital to the useful control of chemical action on the silver image. No attempt can be made here to present all the theories and glorified hunches which led to the solution of the problem, but a knowledge of some of the fundamental principles will be of value to the users of this system which is known by the general name "Etchadine."

These principles may be better understood by describing the special properties which a chemical reducer should have in order to be of the greatest value for local application.

The chemicals used and the solvent used to dissolve it should have a *slow diffusion rate* so that the interchange or circulation between the picture surface and the applied solution will be slow. This will tend to minimize the uneven reduction caused by applying the reducer to an uneven depth over the picture surface.

The reducing solution must have a *low surface tension* in order to give good brushing qualities and prevent it from standing in drops on the surface of the picture.

It must keep its strength constant and *not deteriorate* on exposure to air or light.

Since all chemical reduction consists in converting the silver of the image into a silver compound a means must be found to *dissolve this silver compound* as the work progresses, otherwise the underlying silver will be masked by an over coating of silver compound. This would interfere with accurate observation as to the exact amount of lightening of the image accomplished. Also in certain cases it would interfere with subsequent applications of the reducing chemical.



Fig. 1

The system used should *not have* a dangerous *softening action* on the *gelatin surface*.

The rate of *attack* on the *silver* in the image must be at a *progressively diminishing rate* so that the action may be controlled in the deeper parts of the image. The solution therefore must work satisfactorily when thinned and also its action may not be opposed by any great quantity of resisting chemical previously applied to the gelatin surface. If a neutralizing chemical is used in very great amount to hold back the action of the reducer, there may be a sudden increase of activity when the reducing chemical finally overcomes all of the resisting chemical. Thus a great increase of activity may result just at the time it is desired to stop the action.

The need for a reducing solution which may be quickly stopped and readily reapplied in a series of rapid applications eliminates in my opinion, the extensive use of water solutions although there are many credible examples of excellent work with such solutions.

Though the afore-mentioned specifications are incomplete they indicate some of the desirable properties which have been largely absent from reducing formulas previously used. The answer to these problems was found in a properly balanced solution of Iodine in oils and suitable non-aqueous solvents.

In order to cause a controlled hydration of the gelatin and thus create an oil and water separation, a control medium was compounded which also



Fig. 2

serves as a stopping agent and a partial solvent for the silver Iodide formed in the reducing process.

The oil solution is now known under the specific name Blendoil. There is also an Etchadine Thinner for use with Blendoil.

The use of the Etchadine system of local reduction or, local etching as it might better be called, is divided into three steps.

First: picture surface is wet with Etchadine Control Medium. A tuft of cotton is used to spread the liquid around over the surface to insure even penetration.

Second: after the Control Medium has penetrated for a minute or more, apply a solution of Etchadine Blendoil which has been sufficiently thinned with Etchadine Thinner. The Blendoil is best applied with a brush. The period of application should be timed by counting. In timing the period of application an experience will soon be gained which will enable the user to predict with fair accuracy the amount of removal he is about to obtain. I always work with a known proportion of Blendoil and Thinner. One soon learns to regard the different densities of silver deposit as being so many counts deep. Such a system of work is a great time saver and is quite necessary when working with strong solutions. In working large areas with much thinned solutions of Blendoil the amount of removal may be partly judged by observing the image as it grows gradually lighter but it is better not to abandon the counting method completely.

The third step is simply to stop the action of the Blendoil by rubbing



Fig. 3

the tuft of cotton, which was previously wet in the Control Medium, lightly back and forth over the area of application a little longer than is necessary to remove all of the Iodine color.

When the etching is finished the print or negative must be placed directly in a clean acid hypo bath. The hypo bath must not be exhausted, not too cold. Fixation ordinarily need not exceed five minutes.

Washing and drying are carried out in the usual manner.

For building up the image or spotting any of the various methods may be used. It is a matter of personal choice whether a pencil or a brush and spotting colors are used.

The illustrations herewith were done on glossy paper. All retouching was done on the prints. No dodging or projection control was used though the portrait might have been helped by a little judicious printing.

The portrait prints (fig. 1 & 2) were identical in every respect before figure 2 was etched with Etchadine. A solution of two parts Thinner and one part Blendoil was used for all the work done on this picture. The different degrees of removal were obtained entirely by applying the Blendoil for various lengths of time.

The counting or timing was done at the rate of about four counts per second. The counts required in different parts of the picture were as follows. The general lightening of the hair required several overlapping ap-



Fig. 4

plications of one hundred counts each and the count was increased to a maximum of two hundred counts in the deep shadow on the hair.

The shadow along the edge of the dress at the neck was first etched with several overlapping applications of one hundred and fifty counts each until considerable lightening of the shadow had occurred. I then allowed this area to rest for several minutes while I worked on other parts of the image. The overlapping applications were again repeated with a count of one hundred and after another rest period the work was smoothed up with a maximum count of seventy. It was found that with a count of seventy the work would not go too deep regardless of how many times the Blendoil was applied provided the tuft of cotton containing the Control Medium was rubbed on for several seconds between each application.

The facial blemishes were removed by applications ranging from fifteen to forty counts. When working with a very small brush I have found it helpful to wind a small tuft of cotton around the brush about one quarter of an inch above the tip. Another brush may then be used to saturate this cotton with Blendoil. The Blendoil in cotton will then feed down through the point of the brush for a considerable period and much time will be saved by not having to dip the brush.

Comparing illustrations (fig. 3 & 4) will show the result of lightening the highlights on clouds and the removal of objectionable detail such as the small house at the left and the telephone pole at the right.

When working on large masses of small detail such as freckles, the work must be viewed frequently at a distance in order to tell in which area more work needs to be done.

Working in a poor light or with light from the wrong direction so that a glare is seen on the wet paper will make good work entirely impossible. Get properly organized before you attempt any extensive art work on a photograph.

In closing it may not be out of order to say that there are certain curious properties of a solution of oil and Iodine as described herein which has led to a process called dry bleaching.

Dry bleaching is useful in connection with certain selective toning and intensifying operations as well as for general lightening of large areas, but the extent of the subject matter is too large to be included in the present article.

Bromoils And Transfers

Charles H. Partington

Part III

THIS third and last article on bromoils and transfers, will deal with the latter and it is hardly necessary to state that the production of at least passable bromoils must be achieved before attempting to make a transfer. With the exception of the direct manual work of inking, there should be no difficulty with bromoils if the simple instructions given in the two previous issues of Camera Craft are duly observed and followed. Brush work is somewhat a matter of experience and with a little diligent effort will soon develop to an interesting and controllable operation. To those who are beginners, let it be said that the making of a transfer will lend much assistance toward improving brush work of the bromoil. The transfer will very quickly indicate if inking has been too heavy, whether ink has been too soft and the like.

When discussing transfers, the first consideration of course is the equipment, of which the most important item is the press.

Some very fine transfers have been made with a wash wringer and at the beginning of my work I used such a device. However, a wringer at the best is only a makeshift. The wringer principle, somewhat modified, has been applied in the design of the formal two-roll transfer press. The main difference lies in the method of applying pressure, which in the wringer is obtained by a screw at each end of the roll while for the bromoil press it is

controlled by a single center screw in such manner as to guarantee even force along the entire length. A sort of shelf, generally part of the press, is situated on each side of the rolls to support the print pack before and after being passed through for contact .

From using the wringer I graduated to a burnishing press such as used by photographers years ago for polishing prints. It was an all-metal affair of the wringer idea and when used for burnishing its hollow rolls were heated by gas. Of course no heat was necessary for transfers so the gas cocks were removed. This device was far better than a wash wringer but not wishing to pay the high price of a regular bromoil press I scouted about for something else. Discovery of what was known as a printer's proof press gave me exactly what I wanted even though the machine was too large and extremely heavy. The roll was solid metal, six inches in diameter and nineteen inches long. The complete press was a matter of six hundred pounds and would accommodate a transfer eighteen by twenty-four inches. The press was picked up for a small sum in an engraver's plant and the information was extended that it was a relic of civil war days at which time it was used to print a crude sort of news sheet.

This old press had the principle of operation I desired as it was practically the same as that used for etchings and lithography. The principle is that of a traveling table and a roll to apply pressure. The table of this old proof press had a rack at one edge, meshing with gear teeth on the roll. Turning the roll propelled the table so that the surface speed of both were identical. This means that the table carried the print pack for transferring and the roll simply applied pressure as passage occurred. This is quite different than the two roll idea which drags the work through by friction.

The single roll, traveling table type of press, designed especially for bromoil transfers, is now manufactured and available. It represents a neat, rigid, high grade machine capable of producing most excellent results and best of all is available at a price within reason. The advantages of this type of press are discussed further on where actual operations for transferring are given.

Conceding the worker has produced a good bromoil or at least a passable one, and that he has a press of some sort, the mention of a little other equipment necessary is now in order.

The print pack or the lack of one has been the subject of controversy at times with some workers claiming for the necessity of the cushion while others champion the "hard" contact. The cushion idea is my choice as the resiliency of the pack means transfer into the very fibre of the paper and with less pressure. The "hard" contact of pressure roll direct on the back of bromoil and transfer paper is severe and too likely to break down the gelatin.

The print pack represents all blotters or else two blotters with sheets of cardboard on the outside. Between the blotters are the bromoil and transfer paper. The mission of the blotters is not only to supply a flexible foundation for the "squeeze" but to absorb the water forced out of the wet bromoil when pressure is applied. With the double roll type of press, the print pack may be as light or heavy as desired because the top roll position can be varied to suit the thickness to be passed for pressure. With the single roll, traveling table press, the distance for passage of print pack is fixed

which is quite an advantage, as the thickness of pack, once established to produce the correct pressure, leaves no worry or chance of error thereafter. My print pack consists of a sheet of cardboard top and bottom, several blotters and a few sheets of newspaper. These, plus the thickness of transfer paper and the bromoil form the necessary thickness. The cardboard is just a fairly good quality of mounting stock and like the blotters has a size equal to the limit accommodated by the press in order to handle any print from the capacity of the machine to the smallest desired.

The matter of kind or quality of paper for transfer as well as its treatment for manipulation is the next consideration.

By treatment, I refer to preparation of the paper previous to making the impression as a little thought will bring to mind the question of whether the bromoil will adhere to the transfer or not. Little danger of such a condition can exist where ink contact is concerned but where the gelatin of the bromoil is clear or nearly so, it is not difficult to imagine that adhesion can result.

One way to avoid adhesion troubles, not only used by some workers as a precaution but advocated as a necessity, is that of treating the transfer paper with turpentine or some other thin, greasy liquid. The substance used is sprayed on with an atomizer to present only a light application or else the paper is bathed and the surplus liquid removed by contact between blotters. I gave this idea a fair trial, even though unnecessary, and concluded it was too messy and left the print too dead until complete evaporation of the turpentine had taken place. With some few papers, the above treatment or maybe even something more greasy such as heavy oil, would be essential to prevent sticking but that would mean paper as soft as blotters. Any good grade of water color paper is excellent and while I have used many other kinds including Japanese tissue, cover stock, etc., settlement has been established on a hand made French product that gives a very pleasing effect. To those who may desire to try the identical stock I pass on the trade name of "Ingress," made by Canson and Montgolfier and obtainable from their New York office and warehouse located at 461 Eighth Ave. It is obtainable in many colors besides white and black. Colors of course are of little use but for odd effects the greys and tan shades are nice. I use mostly white and a slightly tinted cream stock. Blacks, or to be more exact, the dark portions of a print, made on this paper, really surpass in quality the platinum print of years ago, now seldom seen. Whites present a clear, yet subdued quality that is more than pleasing. This paper may or may not appeal to you but even if it does, you will find much of interest in playing with other papers also. The really rough, eggshell surface drawing paper will give you broad effects if such is your goal while a very smooth paper offers chance for reproduction of the finest details.

Dispensing with the messy turpentine treatment we adopt the far cleaner liquid, plain water. Previous to putting the bromoil in contact with the transfer paper,, put the latter in a tray of water for five or ten seconds, just enough to really wet it. Remove surplus water by rolling between two blotters. The paper will then be just more than damp but not wet. No water should be visible on the surface. The damp face of the paper is just enough to prevent absolutely dry contact with the bromoil and directly after pas-



"Cedric Wright"

Ansel Adams

Illustrating "My First Ten Weeks with a Contax"

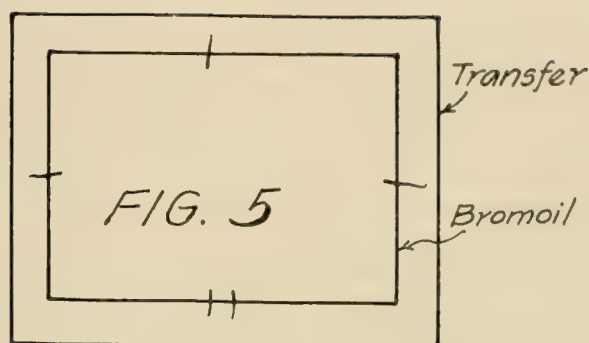
Zeiss Contax Negative; 12x enlargement; 50 mm Tessar; F:8, 1/100 sec., sunlight; Panatomic Film in D.K. 76; P.M.C. #10, in Amidol.

sage through the press the two sheets are readily separated by a slow, steady pull, starting at one corner. If a second impression is made dampen the transfer paper again either same as before or by the use of a wet sponge applied to both back and face of print. Any visible water is best blotted off previous to contacting with the re-inked bromoil. The second dampening of print is done not only to prevent sticking but to swell the paper to the same size as when first impression was made. As paper shrinks after drying it is possible to have a difference in image size especially where large prints are concerned.

The matter of proper pressure is quite important in the making of a bromoil transfer and it is well to make a number of prints as an experiment to determine this really important factor. Too much pressure will tend to stretch the paper of the bromoil with the result that sharp wrinkles are produced toward the end of the sheet thereby ruining both the inked print and the transfer. In addition the gelatin will be badly damaged and possibly to such an extent as to prevent any chance of restoration even by careful inking. Too little pressure means a spotty transfer especially if other than perfectly smooth paper is used. The ink does not transfer completely to fill the entire surface of the paper. Keep this pressure idea in mind and remember that simply because contact is necessary it does not mean a force of a crushing nature. Only a moderate pressure is necessary to produce a transfer and when the proper procedure is followed the resulting print is very pleasing and rich. Wasting a little time and material to determine proper pressure will pay large dividends in satisfaction thereafter.

A single transfer producing a pleasing print is possible with some subject matter but it must be such as will offer no detriment to heavy inking. Nice results from a single impression are made at times but the quality of the print at its best will not compare favorably with even a poor multiple transfer which is made from two or more printings, the bromoil being re-inked for each impression. Most of the time the double transfer produces all the quality desired but at times three or even four inkings will be found valuable toward building up excellent quality. It is essential however to ink extremely light for multiple transfer no matter whether for only two impressions or more. Often it is an advantage to re-ink only certain portions of the print and this control is certainly valuable when needed.

Multiple transfer, whenever mentioned to those without experience in the work, most always results in the question of how registration is obtained. Registration, and perfect at that, is the easiest part of the whole process. Such methods as putting a pencil line on transfer paper around corners of bromoil, laying off the exact center with a rule, etc., are all clumsy and unreliable. All that is needed after first impression has been made is to mark both bromoil and transfer per "Figure 5". Do this previous to separating the sheets and while they are still in contact from the pressure. No ruler is necessary, just take a pencil and make a freehand mark starting on back of bromoil and about one-quarter inch from the edge. Do this on all four sides as indicated on sketch. While it is not likely that any four marks placed at random would land on the exact center of each of the four sides I *always* put an extra line on one side to make it easy to prevent any chance mistake of getting the following positions upside down. After marks have been made, strip your print and you are assured of ab-



solutely perfect registration of later impressions by simply matching the original lines. If you match the lines correctly and then find signs of a double image, note the faulty registration appears toward end of print that passed through press last. The answer to this is too much pressure which stretched the bromoil more and more as end of sheet approached the rolls.

Following the general instructions of the preceding text which aimed only at bromoils and transfers as a whole, it should be of interest if at least a few of the many possible points of control are presented.

To me, the first and really most valuable point is the handling of the border of the print to which I refer as the safe edge and which is simply the white outer band so often used in straight photographic printing. This border, produced by a mask on the negative or direct against the bromide paper, should be at least one-half inch wide. When inking the bromoil it allows inking to the very edge of image without the brush coming in contact with the wet blotter beneath print or with stray water on the glass if no blotter is used. With a transfer as the goal, this border can be cleared of any overlapping ink by the use of a piece of wet cotton or soft cloth. When transfer is made, this edge can be left as a margin and is quite pleasing if print is mounted under a cut-out center. Should the print be on a paper of a different shade than the mount, this border showing through the cut-out presents a quality as effective as that applied to old engravings, etc., of years ago. There is richness in such display of a print and I feel anyone will be repaid by the results the little extra effort produces.

With the preceding paragraph practically concluding this treatise on bromoils and transfers, I desire, even though running the chance of criticism because of repetition, to call attention to simple yet important points bearing on the success of this work. These points are numbered in an attempt to make them more prominent for a check should your efforts present difficulties.

1. The very foundation of success is in the bromide paper. The quality to make a beautiful straight print has no bearing on the quality to be receptive to ink for bromoil. Just any paper will not work.

2. Do not play with first one set of formulae or one method and then with another. When you find one process to be workable keep at it to further its perfection of results. Details as I present are not of necessity the peer of all but can be recommended after fifteen years as being very satisfactory.

3. All chemical manipulation as well as washing should be complete

and thorough. Drying should, at all times guarantee even evaporation. Ink not taking to the print in a uniform manner can most always be traced to the faulty operations as mentioned.

4. Ink that is too soft or brushes not free of cleansing fluid will always produce a flat result and clear whites are impossible.

5. Hard ink cannot be applied in a few minutes. It takes time. The results however, are represented by beautiful quality shadows and half tones plus clean whites.

6. Use good brushes only with natural ends on the hairs. No matter how good, hairs will break and get on the print but are easily removed by the point of a knife blade. To avoid excess of this trouble, work out the brush when first starting by hopping on a sheet of newspaper. The breaking of hairs takes place mostly when brushes are put aside to dry and show up most when first used on another print.

7. Whites can be accented by touching with damp cotton on the end of a match or tooth pick. Soft effects are obtained by soft, even brush action. Brighter effects are produced by a light "hopping" action of the brush.

8. Do not expect quality in a transfer if you ink too heavy or use an ink that is too soft. You will soon discover that the slightest trace of ink on the bromoil will appear on the transfer and the latter will soon teach if your whites on the former are clear or not.

9. Do not apply registration marks until the bromoil and transfer have passed through the press.

10. The slightest drop of water on the bromoil, when inking, is a bug-bear. Use the white border for a safe edge at all times.

11. Taking for granted the bromoil is good, the only detriment to a good transfer is pressure that is not right. Too little pressure means a lack of depth and richness while too much means destruction of the gelatin and slippage.

May I, in closing, again designate the bromoil transfer as a really individual means of expression for the pictorial worker in photography. It allows *individual print control* which is quite different from the photo-mechanical work of straight printing or the mere duplication of prints from a hand worked negative, paper type or otherwise. Of course, unless you have unlimited time at your disposal, you could not produce enough transfers to submit to even half the salons that occur. You can however submit prints of this beautiful and interesting process to a sufficient number of exhibitions to be well represented. When one notes the great number of salons and the volume of prints submitted it is easy to imagine the workers' time involved. It is this time, or really the lack of it, that is no doubt responsible for the large number of straight prints.

It is just possible that some day mass production of photographic prints, especially for salons, will recede to some extent and that workers will again revert to individual presentations of their efforts. Of the several processes that offer the worker the chance to present something more than just an image on paper, I prefer the bromoil transfer which may or may not appeal to you but even so, a fair trial with this printing medium is very likely to lend an added interest in photography which you little knew existed.

Cinema Section

Edited by

William A. Palmer

How Sound Is Photographed

THERE is a good deal of curiosity among movie makers as to the mechanics whereby pictures are made to speak. It is mystifying the way a single piece of film can be threaded into a projector and give both pictures and sound in perfect synchronism and this naturally gives rise to many questions about the seemingly magical means of photographing sound. The story of how talkies are made to speak is a very interesting one and we are going to try to give the fundamental principles without getting too involved in such things as decibels, frequency response, and modulations.

Before the methods of recording and reproducing sound can be understood clearly, it is necessary to look into the nature of sound. Sound is a sensation due to a stimulation of the auditory nerves by vibrations. No one is so unobserving that he fails to associate a sound with the actual movement of a body. An object is struck by a hammer and a sound results. A violin bow is drawn across a string and a sound results, this time more pleasant. It can be shown easily that all sounds, whether they be loud or soft, harsh or pleasing, are composed of vibrations of different frequency or speed of vibration. A high shrill note is made by rapid vibrations while a low note has slow vibrations. All sounds are vibrations of certain frequencies or mixture of frequencies. Furthermore, sounds of irregular vibrations are merely noises, while sounds of regular frequency are musical notes.

All these vibrations are transmitted to our ears through the air in waves, in much the same manner that ripples travel in a pool of water. When the ripples or waves of air reach the ear, they set the ear drum to vibrating in the same manner that the original object that caused the sound vibrated. Thus, it can be seen that the sensation we receive is really the vibration of our ear drums. If, then, we have some method to make the ear drum vibrate as the string of a violin or the reed of a saxophone does, we get the sensation of hearing a violin or a saxophone even though there is no such musical instrument about. We are all familiar with this effect from our experience with phonographs. The whole problem in talking pictures is the arrangement of a device to cause vibrations of our ear drums to give us the sensation of speech as the actors lips move.

There are two main systems used to put sound with motion pictures, namely, the sound-on-disc system and the sound-on-film system. The disc outfit is merely an elaborate combination of a phonograph and a motion picture machine. The sound is recorded on a disc very similar to that used by the regular phonographs. Each reel has one disc which is sixteen inches in diameter and turns at a rate of speed about one-third of the velocity of the ordinary phonograph record. By having a large record run at a slow speed it is possible to have it last about eleven minutes, the time required to show one reel. The projector and the record turntable are driven by the same motor; so all that is necessary to make sure that the sound and picture will coincide, is to start the needle on the record and the picture in the projector at the marked beginning of the reel and the synchronism should remain, unless the film happens to break.

The sound-on-film outfit is quite a bit more elaborate; for it makes use of some very clever principles to record sound waves or vibrations as a photographic image on a narrow band called a sound track, along the film itself. With this system the danger of faulty synchronism, whereby the speech of the actors becomes out of step with the motions, is completely eliminated; for the sound is always alongside the picture on the same film. For this reason, as well as other minor ones, the sound-on-film method has replaced the disc system almost entirely.

Sound tracks are of two types, variable area and variable density. The former looks like a jagged saw tooth strip while the latter consists of striations of different densities running at right angles to the length of the film. Both sound tracks operate on very much the same principles although the apparatus used in making them have different constructions. In the recording and reproduction of either type of sound track, there are many transformations through which the sound vibrations must pass before they are re-created as sound waves. These transformations take forms which are totally unrelated in form to the original sound vibrations except in one respect, the rate of vibration. That is, in all the transformations the rate of vibration or the number of vibrations per second must be represented, whether the sound exists in the form of electricity or light. Let us, then follow the sound waves through their various transitions.

As the sound vibrations are made by the actors on the movie set, they travel in waves or ripples through the air and are picked up by microphone. The microphone is really an instrument with a construction similar to the human ear. It has a diaphragm made of very thin metal, comparing to the ear drum, which vibrates from the action of the sound waves. This diaphragm, as it vibrates, sets up electrical impulses in a circuit in a way similar to the ordinary telephone. These impulses are exact representation of the speech vibrations, for the number of electrical impulses per second are exactly the same as the rate of vibration of the original sound. The electrical impulses made by the microphone are then amplified through an amplifier, similar to that used in all radio sets, and delivered to the recorder.

The recorder receives the electrical impulses that are accurate representations of the original sound waves. In the variable density system used by the Western Electric Company, a pair of small metallic ribbons are stretched side by side and made to vibrate by the electrical impulses. At the same time, a beam of light is directed through the slit made by the two ribbons and as the ribbons vibrate, they vary the amount of light that can pass between them.

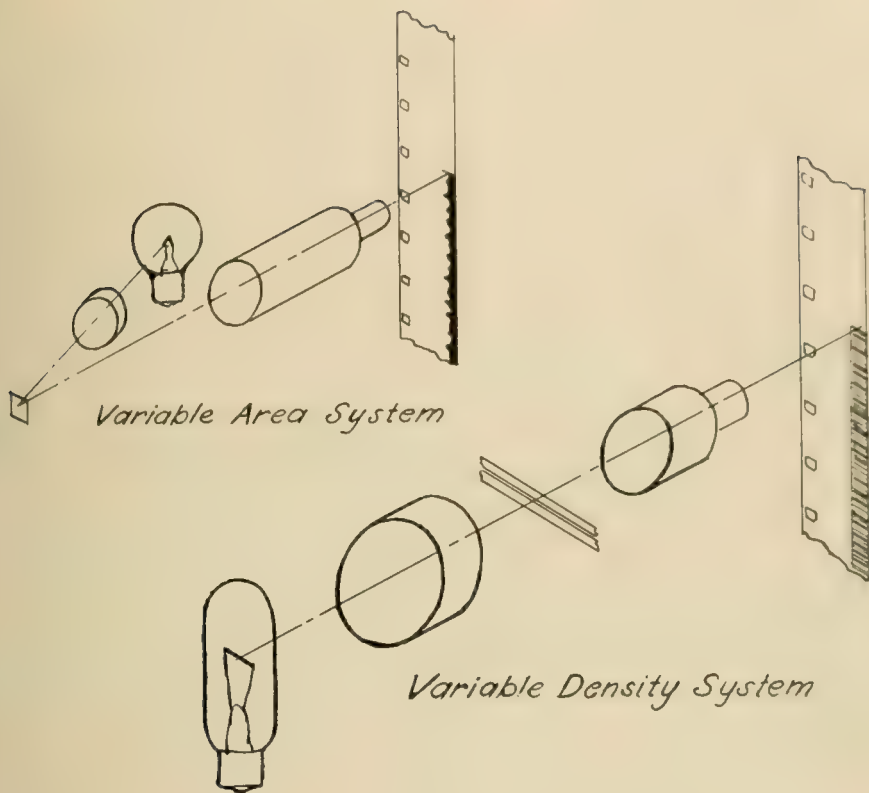


Fig. 1

since they come together and then move apart. The light passed by the ribbons or light valve, as it is called, is focussed on the film passing through the recorder so that the sensitive emulsion of the film receives more or less light as the light valve opens and closes. This produces bands or striations along the edge of the film and the density of the striations is proportional to the light received by the film at that point and thus proportional to the original sound waves. In the lower diagram of figure 1 is illustrated the Western Electric light valve. Light from the small mazda lamp shown at the left is concentrated by a condensing lens on the two ribbons. Another lens then focusses the image of the ribbons upon the moving film.

In the variable area system used by the R.C.A. Victor Company, the electrical impulses are made to vibrate a tiny mirror on a device called a galvanometer. This mirror reflects a beam of light through an optical system to the film. As the mirror vibrates, it turns the light beam one way and then the other, just as one might do with a beam of sunlight reflected by a hand mirror. This moving beam of light concentrated on the film makes the jagged edge sound track as shown in the upper diagram of figure 1. In this diagram the

light from the small mazda bulb is concentrated upon the small rectangular mirror which reflects the light through an optical system to the film.

After the recording of the sound has been done, the film must be developed just as all photographic exposures must be. It may be processed as a negative or by the reversal process as in the case of 16mm recording cameras. Whether negative or positive, though, sound track may be played in a projector, for it sounds no different. In final analysis, the only difference between a negative and a positive sound track is that in one case the loudspeaker cone will move in and out while in the other case the cone will move out and in. The rate of vibration will be the same and that is all that counts. In professional theater pictures the sound is always developed into a negative track and then printed onto a positive film along with the picture.

When the film is reproduced it is drawn by the mechanism of the projector past a very fine line of light. The light passes through the film and falls on the sensitive surface of a photo-electric cell or electric eye. As the film moves, the striations or jagged edge of the sound track (depending upon whether it is a variable density or area track) interrupt the light falling on the photo-electric cell in exactly the same manner that the light valve or galvanometer in the recorder did. It will be remembered that the light rays in the recorder were exactly proportional to and represented the original sound vibrations; so, then, in the projector there are again light impulses that represent the original sound waves. The photo-electric cell has the ability to react to the light that falls upon it and set up minute electrical impulses that have frequencies just the same as the light impulses exciting it. These minute electrical impulses can then be amplified and delivered to a loudspeaker.

The loudspeaker, as we know from our familiarity with radios, has the ability to receive electrical impulses and turn them into mechanical vibrations or movements of the paper cone. These vibrations set up waves in the air which travel to the listeners ears and are there interpreted as sound.

Perhaps it would be well to review the various changes that the sound vibrations undergo in the process of being recorded and reproduced. Referring to figure 2, one sees that sound created by a bell exists first as mechanical vibrations (1). The mechanical vibrations set up waves in the air (2) which cause mechanical vibrations in the microphone (3). The microphone sets up electrical impulses (4). These impulses are amplified (5) and carried to the recording element, light valve or galvanometer, and turned into light impulses (6). The light impulses affect the coating of the film and are changed to a photographic image (7). In the laboratory the negative sound track is printed to make a positive (8). In the projector the photographic image of sound is turned back into light impulses (9). The photo-electric cell turns these light impulses into electrical ones (10). The electrical impulses are amplified (11) and carried to the loudspeaker where they become mechanical vibrations (12). The vibrations set up waves in the air (13) which reach our ears and become sound (14). Thus the original mechanical vibrations of the bell must be transformed fourteen times before they are interpreted by the ear as sound. In all the transformations, though, there is always one common factor, the rate of vibration. If the bell vibrates at the rate of 500 vibrations per second when struck, the microphone will set up 500 electrical impulses per second and the light valve will make 500 light fluctuations per second—and so on through the many transformations.

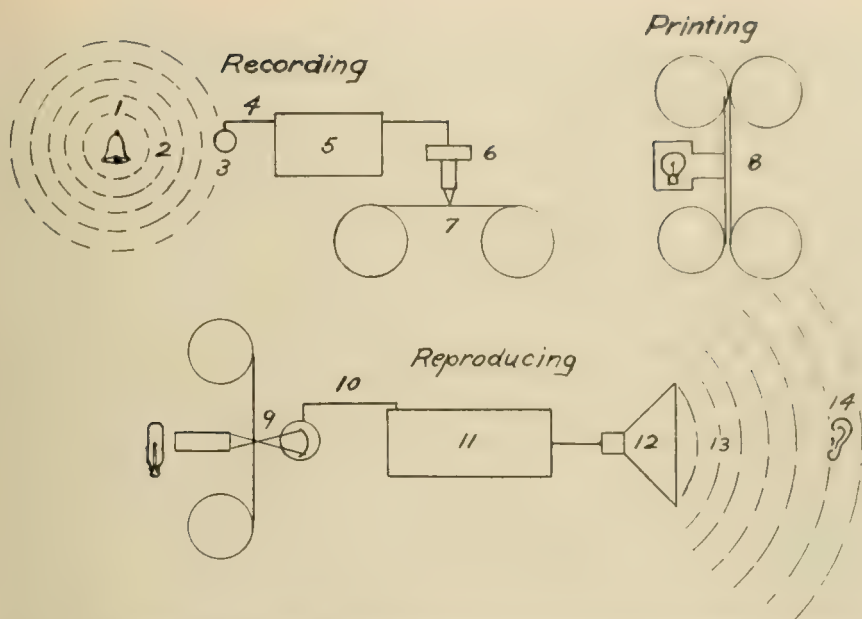


Fig. 2—Illustrating the many transformations which sound goes through in sound-on-film recording and reproduction.

Questions and Answers

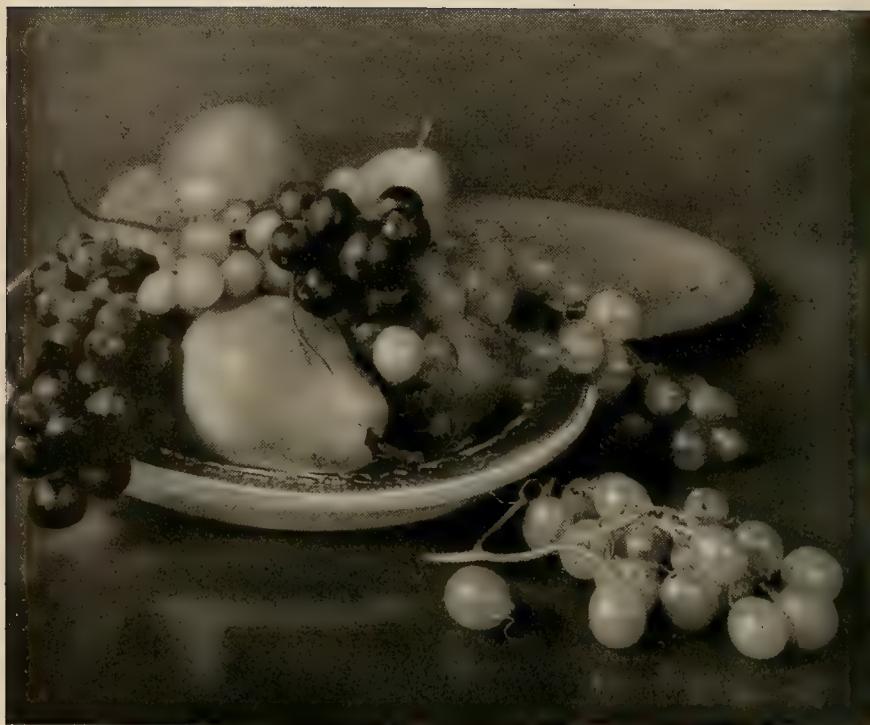
Question: Is there any projector made to use both 8mm and 16mm film?

Answer: Not to our knowledge. Such a machine would probably not be very practical, for the illumination system would have to be a compromise and therefore inefficient for one or the other or both sizes. Furthermore, it would probably cost almost as much as two separate projectors for the two sizes of film.

There has been only one projector marketed which could run two film sizes. The Bolex projector, a European importation, can run either 9.5 mm or 16 mm film. It is distributed in this country by the Bolex Co., 45 West 45th St., N. Y. This combination for 9.5 mm and 16 mm does not offer the problem that a combination for 8mm and 16mm would, for although the film widths differ considerably, the picture areas are nearly the same.

Question: Can any of the filters, intended for black and white photography, be used with Kodachrome film?

Answer: Not ordinarily without throwing the color rendering badly off. In some cases, however, a K1 or Bell & Howell 2X yellow filter can be used on a cloudy day to purposely give a warmer tone to the scene. When so used the regular filter factor should be applied.



"Dark and Light Grapes"

Christine B. Fletcher

Advanced Medal Print

■ Once again we have the pleasure of exhibiting a still life with that peculiarly charming quality which places the stamp of individuality upon all of Mrs. Fletcher's work. Those who claim that there is no opportunity for individual expression in photography might well be given the task of reproducing the lovely soft-sharp quality of definition which lends such a romantic feeling to Mrs. Fletcher's work. Of course, it is not an insuperable technical problem to achieve such quality but to fit it so perfectly to subject matter, requires a good deal more than mere technical competence.

Most of us would appreciate the necessity of placing the bunch of grapes in the foreground, but unless we had something of Mrs. Fletcher's sure instinct for composition might over-look the advantage obtained by placing the small plate in the upper right, and consider the composition complete without it. Observe how this contributes a subordinated repetition of the form of the large plate, and breaks up what would otherwise be a monotonous expanse of background. The composition might be slightly improved if the piece of fruit which constitutes the apex of the arrangement were carried slightly higher in the picture space. This would add height to the whole, and give a more definite apex to the triangular composition by raising one of the two highest pieces of fruit, which are now at the same level, above the other. The one to the left should be given the highest position. This change would also serve to break up the background area.

Data: 5x7" Century View, with 4x5" film; 8" Centar Rapid Rectilinear; 25 secs. at F:22 by a combination of daylight and two madza lights in Kodaflector totaling 250 W; Defender X.F. Pan., in Defender M.Q. Borax; Dassonville Charcoal Black B, in Dassonville Amidol. 10x12" or 11x14" print on 16x20" mounts may be obtained at the price of \$6.00, on application to Camera Craft. Prints will be exchanged with prize winners in these competitions only.

**Second Award
Advanced Class**

■ Mr. Williams offers a most attractive landscape with fine aerial perspective. Observe the importance of the low angle of light in the rendition of the distant mountain. With a front lighting the shadows would be absent and the mountain would be only an uninteresting even-toned mass. It is a nice problem in composition to adjust the mass of the trees, both in tone value and in size to the rest of the picture. We are inclined to feel that as presented the tree mass is a trifle too strong due partially to its size and partially to the very deep tone in which it is rendered. If a more distant camera position were possible it would probably have to be at an elevation and the focal length of the lens would have to be adjusted so that the height of the mountains in the picture space, and with relation to the trees would not be diminished. Obviously if this occurred our attempt to reduce the strength of the trees slightly would be defeated. Of course the trees must be shown in a fairly deep tone or we lose aerial perspective, but it seems that with proper film selection, proper filtering, and slightly fuller exposure that this tone could be raised slightly to the advantage of the picture. The wisp of cloud at the right edge of the print contributes nothing to the picture, tends to catch the eye, and consequently should be removed.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Soho reflex; $7\frac{7}{8}$ " Voigtlander Collinear; 1/25th sec. at F/8 about 4:30 P.M. with K-2 filter; E.K. S.S. Pan., in Metol Pyro; Velour Black 1 in M.Q. 11x14" prints on 14x18" mounts may be obtained at the price of 10.00 on application to Camera Craft. Prints will be exchanged with prize winners in these competitions only.



"Valley of Shadows"
M. Bradley Williams



"Wind Swept"

R. Owen Shrader

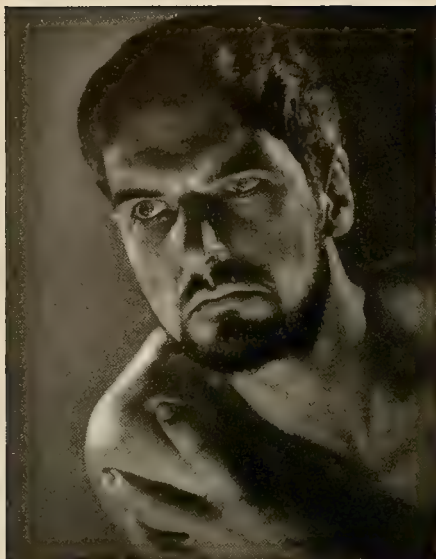
high praise for the fine judgment exercised in their selection. The eye travels through the picture space with a circular movement starting at the lower left it follows the direction of the sand ripples up to the right hand tree, swings to the left along tree

(Continued on Page 45)

**Third Award
Advanced Class**

■ To our eye the delicacy and decorative quality of this picture is most pleasing. Observe how marvelously the peculiar cloud formations fit the picture. In subtle fashion they seem to echo the surface quality of the sand. Prominent clouds would have destroyed the delicacy of the picture and might easily have overpowered the landscape elements thus transferring the emphasis and changing the whole nature of the picture. There is no evidence that these clouds are not in the original negative, but if they were printed in Mr. Shrader deserves

**Fourth Award
Advanced Class**



"Judas"

Axel Bahnsen

Data: Studio Camera; 18" Verito; Defender X.F. Pan., in borax developer; E.K. Opal W in D-52. 11x14" prints may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

**Fifth Award
Advanced Class**

■ Mr. Reisman offers a still life with considerable story telling power. The device of using the sheet of music for a background appears most appropriate in this case and enhances the idea of the picture. We imagine that some beginners may question the use of such a background thinking that it violates the oft repeated maxim that backgrounds must be kept simple. If this is the case it points up the fact that rules are dangerous things to follow blindly. The necessary simplicity of any given background is strictly a relative matter, not a purely factual one. The essential thing is that the background conform with and enhance the principle object in the picture. Consequently when the principle object has very great prominence as is the case here the background can be permitted a correspondingly greater degree of interest in its own right, without violating the principle of unity, provided only that the interest introduced into the background contributes to the idea being brought out in the picture.

A narrow black border might help.
Data: 3¼x4¼" Ensign Special Reflex; 6" Aldis; 45 sec. at F:32, by two 60 W lamps; Defender X.F. Pan., in D-61; print on Defender Velour Black A. 11x14" prints on 16x20" mounts may be obtained at the price of \$5.00 on application to Camera Craft.

Prints will be exchanged with other prize winners in these competitions only.



"Interim"

Emil Reisman



"San Augustin Acolman Monastery"

George Forrester

Amateur Medal Print

■ Mr. Forrester has done a fine job of holding a long scale of values and has selected a very interesting aspect of this fascinating old building. The eye moves easily into the picture and on to the sunlit area at the right but is kept from leaving the picture by the dark frame which surrounds the whole. Observe how nicely just the right amount of detail has been retained in those parts of the walls which are in shadow. Not enough so that there is too much for the eye to see, but sufficient to avoid the jet black shadows that are so untrue to actuality, and so often found in pictures of such subjects. Life and interest could have been added by including the figure of a monk somewhere in the picture. The best position would probably be at the far end of the corridor, with the figure either walking toward the camera or gazing contemplatively toward the sunlight.

Data: Contax; 50 mm. Zeiss Tessar; 3 sec. at F:8, on E.K. Panatomic in DK-76; E.K. P.M.C. No. 8 in D-72. 8x10" prints on 14x18" mounts or 11x14" prints on 16x20" mounts may be obtained at the prices of \$5.00 and \$7.50 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.



**Second Award
Amateur Class**

■ Mr. Charles-Smith offers a picture in which action is well indicated and with the figure nicely placed in the picture space. We have often said in these columns that it is not necessary to show all of a machine in a picture so that its function is entirely evident. This we believe is essentially true and is further supported by the fact that if one attempts to include all of a machine he usually finds himself with a whole lot more in his picture than he knows what to do with. Therefore we are not complaining of the extent of subject matter in this print but feel that the title, by calling attention to the function of the machine, evokes a curiosity that is unsatisfied by the picture. Let what roll? Consequently we believe that in this particular case it would be well to indicate the nature of the machine in the title. Whatever it is that was used for a varnish imparts an unpleasant color to the print.

Data: Leica F; 35 mm. Elmar; 1/100

"Let'er Roll"
L. Charles Smith

sec. at F:6.3, at 10:30 A. M. on cloudy Oct. day; DuPont Superior in P-diamine Metol-Glycin; 2x yellow filter; Defender Velour Black LKK, in Amidol. 11x14" prints on 16x20" mounts may be obtained at the price of \$6.00 on application to Camera Craft.

**Third Award
Amateur Class**

■ There is something very dainty and amusing about the peculiarly lady-like appearance of this little snow-covered tree, but we should not over-look the fact that the picture would be just as successful without that factor. Mr. Anderson was quite wise to make this shot at a time when the background was in shadow for observe how this condition imparts additional prominence to the principle object. One might wish that the large dark tree trunk directly behind the "Little Lady" were not there for this contributes nothing to the picture and is just a little distracting. Mr. Anderson could not eliminate this by shifting his camera position without sacrificing the position of the shadow in the foreground. This is more important to the picture than the elimination of the tree trunk. We have no objection to the background falling out of focus as it does, but would like to have sharpness maintained in foreground so that the snow texture would be well rendered.

Data: 3¼x4¼" R. B. Graflex; 6" Bausch and Lomb; 1/35 sec. at F:11, with K-2 filter, on Defender X.F. Pan., in Glycin; intensified by re-development in Sodium Sulphide. Print on E. K. Portrait Bromide D. 8x10" prints on 14x18" mounts or 11x14" prints on 16x20" mounts may be obtained at the prices of \$4.00 and \$6.00 on application to Camera Craft. Prints will be exchanged with prize winners in these competitions only.



"Little Lady"
Ralph H. Anderson

**Fourth Award
Amateur Class**

■ Mr. Looney has found a most attractive and mischievous looking little model for this picture and he has succeeded in capturing a stimulating feeling of action and joyousness that is most pleasant to behold. In order to obtain the flow of the hair which plays such an important part in imparting that breezy feeling to the print, the exposure was made with what is now the right edge as the base. In making and mounting the print Mr. Looney has simply turned it 90 degrees to the left.

If you don't think this device is effective in imparting action to the picture just view it with the right edge as the base and notice the marked difference in the feel of the thing. With this view of the print the face takes on an almost contemplative expression. The line of the head would be better, and the suggestion of wind-blown hair would be more convincingly carried out if the bulge of hair over the models right ear were smoothed down.

Data: Agfa View; Turner Reich lens; 1 sec. at F:16 on Dupont Pan., in Glycin; Defender Velour Black D in Amidol. 8x10" prints on 14x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Isobel"

Eldredge Looney



K. Utsumi

in the picture space. It would seem that this could be corrected by trimming from the left but we could not find a trim that did not rob the picture of all feeling of movement by centering the two wheels and thus making them appear static. One of our judges suggested that the solution might lie in tilting the camera slightly when making the exposure so that the line of the running board would run into the picture in a more diagonal direction. This remedy would seem to be worth trying.

Data: Leica; 50 mm. Elmar; E. K. Background film, in DK-76; Defender Velour Black S, in D-72. 8x10" prints on 14x18" mounts may be obtained at the price of \$3.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

**Fifth Award
Amateur Class**

■ This picture appeals to us as being more in the nature of an advertising photograph than an exhibition picture, but it is nevertheless true that Mr. Utsumi has discovered an interesting arrangement in these two wheels and has made a technically excellent photograph. Looking at the print as a composition we are bothered by the equal strength of the two wheels. Neither one is sufficiently dominant and separated as they are by the fender it is difficult to consider them as a unit. We also feel that the whole thing appears to be a very little too much to the right

Monthly Competition

Two New Features Added To Competitions

The announcement which appears below was included in the December issue. We are repeating it here so that all those following this department may fully understand its every function. We are happy to state that this new addition to the competitions has been warmly received. Subsequently there is explained still another added feature, which is introduced to the competitions for the first time with this issue. **Please read carefully so there will be no misunderstanding.**

In recent months we have been impressed with the growing number of inquiries which we have received asking if such and such a picture seen in Camera Craft might be purchased and if so at what price. Camera Craft feels that Photography would benefit greatly if both the public and photographers became accustomed to purchasing fine photographs for private collections, just as this is done by groups which are interested in other mediums. To that end we offer the contributors to these competitions the opportunity of stating a selling price on the backs of their prints, and whenever supplied this selling price will be printed along with the technical data which accompanies each of the prints reproduced. Thus whenever a reader is interested in one of the pictures he will know the cost of obtaining a print without taking the trouble to inquire. We are aware of the fact that a certain percentage of photographers are not interested in selling prints. We ask that these individuals state on the back of their prints "Not For Sale," for this information will occasionally save considerable correspondence. No commission of any kind will be taken. **Camera Craft's** function will be to publicize the fact that certain prints may be purchased, and to place the interested parties in contact with each other. **Remember then:** If you are willing to sell prints, please state a selling price on the back of each print sent to the competitions.

To obtain prints simply send your check to **Camera Craft**, 703 Market St., San Francisco, for the amount indicated made out either to **Camera Craft** or to the name of the photographer. Please give title of picture, name of photographer, and the page number and issue in which you saw the picture.

Second New Feature—Exchange of Prints

We are indebted to Mr. Axel Bahnsen, for the suggestion which prompted the inclusion of this second new feature to the competitions. He points out that many will not be able to purchase all of the prints that they would like to have, and suggests that those who wish to do so may state their willingness to exchange prints with other prize winners in these competitions who express a similar desire to exchange. The failure of all previous exchange plans has been due to the fact that the talented workers were deluged with offers to exchange very ordinary work for their fine pictures, and also because these plans provided no means of enabling one to see the picture offered in exchange before accepting it. It will be seen from the rules which we give below that the present plan eliminates both of these disadvantages. Those who desire to exchange prints under this plan should write "Will Exchange" on the back of each print submitted, and an indication of this desire will be printed along with their picture if it is a prize winner. The rules limiting the exchange are as follows:

1. Exchange may take place only between prize winners in these competitions from this time onward, and only a prize winning picture may be offered in exchange.
2. The offer to exchange does not obligate one to accept any particular exchange. It is a tentative offer, and need only be completed when both parties are completely satisfied with the picture offered.
3. Exchanges may be offered only to those workers whose desire to exchange is indicated by the printing of the following phrase at the end of their technical data: "Prints will be exchanged with other prize winners in these competitions only."
4. Those desiring exchange should write to **Camera Craft** stating the print they wish to receive and the print they are offering in exchange. **Camera Craft** will see that the request is forwarded and send the necessary address to both parties.

The limitation of the exchange feature to prize winners only is a very necessary one and is not to be considered as discrimination against those who have taken part, but have not succeeded in winning a prize. If the exchange was open to all, the better workers would not take part in it because they would be flooded with offers of prints which they would not want, and the plan would be doomed to failure from the start. Also it should be evident that one has no right to expect an exchange unless his prints come up to a standard. Acceptance in these competitions provides a definite standard that is fair to all concerned, and it is hoped that the exchange feature will act as an

incentive to those who have not yet won places to work harder and to submit better work. Further, it is essential to the success of the plan that the worker who is offered an exchange be able to see the picture offered to him before accepting. The reproduction of the picture in this department offers that opportunity.

It is important that all realize that in this exchange plan all concerned are fully protected from the embarrassment of being offered work markedly inferior to their own, and that the limitations insure that the number of exchanges will not be great enough to constitute a burden on any individual.

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: Mrs. Christine B. Fletcher, for the Photographic Society of San Francisco; R. Owen Shrader, for The Pack Rats.

The following won points for their clubs in the Advanced Class: Mrs. Christine B. for the Golden Gate Miniature Camera Club; K. Utsumi, for the Miniature Camera Club of Oakland; Edridge Looney, for the Omaha Camera Club; and L. Charles-Smith, for the Washington Pictorialists.

Contributing Clubs

Aluminum Camera Club (New Kensington, Pa.)	Miniature Camera Club of Oakland (Calif.)
Boulder Lens Club (Colo.)	Omaha Camera Club (Nebr.)
Camera Club of Ottawa	Orange County Camera Club (N. J.)
Camera Club of Richmond (Va.)	Oregon Camera Club
For Dearborn Camera Club	The Pack Rats (Pasadena, Calif.)
Golden Gate Miniature Camera Club (San Francisco, Calif.)	Peoria Photo Forum (Ill.)
Hamilton (Canada) Camera Club	Photographic Society of San Francisco
Hartford (Canada) Camera Club	Regina Y.M.C.A. Camera Club (Canada)
Hartford County Camera Club (Conn.)	Schenectady Photographic Society
Japanese Camera Club (San Francisco)	Washington (D.C.) Pictorialists
	Whittier Camera Club (Calif.)

Standing of Clubs

Large Clubs Advanced Class

Photographic Society of San Francisco 5

Small Clubs Advanced Class

The Pack Rats 3

Large Clubs Amateur Class

Golden Gate Miniature Camera Club..... 5

Miniature Camera Club of Oakland..... 1

Small Clubs Amateur Class

Washington Pictorialists 4

Omaha Camera Club..... 2

(Continued from Page 39)

and sky then downward and to the right along the left hand tree, after which the movement is repeated. From this we can see that the composition holds together very nicely.

Data: 4x5" Graflex; 8¼" Zeiss Tessar; 1/10th sec. with K-2 filter, 8 A. M. in January; Agfa Plenachrome film pack; E. K. P.M.C. No. 11 in D-72 partially toned. 10x12" prints on 14x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Advanced Competitors

Ray Atkeson, Portland, Ore.
 *Axel Bahnsen, Yellow Springs, Ohio.
 E. W. Blew, Whittier, Calif.
 R. W. Brewer, Altadena, Calif.
 R. Creer, Chicago, Ill.
 James Emmett, Jr., A.R.P.S., Chicago, Ill.
 Alvin Louis Fischer, Chicago, Ill.
 *Mrs. Christine B. Fletcher, San Francisco, Calif.
 Ellis W. Foote, Pasadena, Calif.
 Norman Rhoads Garrett, A.R.P.S., Prescott, Ariz.
 Fletcher O. Gould, Pasadena, Calif.
 Arnold G. Harms, Chicago, Ill.

Jack Hazlehurst, Chicago, Ill.
 Lionel Heymann, Chicago, Ill.
 Gregory D. Hitchcock, Altadena, Calif.
 V. E. Johnson, Chicago, Ill.
 W. F. Kelley, Chicago, Ill.
 Sorab J. Kharegat, A.R.P.S., Bombay, India
 Kichiji Kojimoto, San Francisco, Calif.
 Fred G. Korth, Chicago, Ill.
 L. H. Longwell, Chicago, Ill.
 William T. Lyon, Chicago, Ill.
 Joseph Margraff, Chicago, Ill.
 R. H. Menz, Chicago, Ill.

Shavenau Monsen, Pasadena, Calif.

N. J. Nalawalla, Bombay, India

D. Ward Pease, Chicago, Ill.

*Emil Reisman, Aldan, Pa.

M. Arthur Robinson, Honolulu, T. H.

H. K. Shigeta, Chicago, Ill.

*R. Owen Shrader, Pasadena, Calif.

S. J. Silverstein, Chicago, Ill.

Dr. Max Thorek, F.R.P.S., Chicago, Ill.

Paul W. Wall, Chicago, Ill.

Don Wallace, A.R.P.S., Chicago, Ill.

*M. Bradley Williams, San Francisco, Calif.

George Wright, Chicago, Ill.

* Denotes prize winners.

Amateur Competitors

Stanley T. Abrams, Oakland, Calif.

C. F. Adam, Oakland, Calif.

Rembert G. Allen, Washington, D. C.

Carl Anderson, Rhineland, Wisc.

*Ralph H. Anderson, Yosemite National Park, Calif.

W. E. C. Anderson, Ottawa, Canada

Dr. Herbert Antoine, San Francisco, Calif.

Fern Bell, Oakland, Calif.

William R. Bland, West Hartford, Conn.

Fred Blume, Jr., Roselle, N. J.

Mrs. G. M. Bodington, Prince Albert, Canada

William Edwin Booth, Richmond, Va.

H. M. Bradley, Ottawa, Canada

Paul Bradley, Omaha, Nebr.

Robert N. Bushman, Schenectady, N. Y.

Jack Cantrell, Chicago, Ill.

*L. Charles-Smith, Washington, D. C.

R. B. Collier, San Francisco, Calif.

Charlotte E. Craig, Pacific Grove, Calif.

Earle Curtis, Beaumont, Calif.

Joan W. Dunn, Wichita, Kansas

C. W. Eddy, San Francisco, Calif.

Gordon H. Ethington, Huntington Beach, Calif.

Fred G. Fellows, Ponca City, Okla.

R. S. Fiedler, Peoria, Ill.

*George Forrester, San Francisco, Calif.

V. M. Freeman, Santa Paula, Calif.

Mortimer Friedman, New York, N. Y.

A. H. Hauber, M.D., Chicago, Ill.

H. J. Henriques, Berkeley, Calif.

Vera N. Henriques, Berkeley, Calif.

Tom J. Hopkins, Twenty Nine Palms, Calif.

George D. Hunter, Cohoes, N. Y.

Richard Jerabek Washington, D. C.

James F. Johnson, Boulder, Colo.

Thelma R. Kent, Christchurch, N. Z.

C. S. Loeber, San Francisco, Calif.

A. H. Lomax, Hamilton, Canada

*Eldridge Looney, Omaha, Nebr.

P. F. Loope, Schenectady, N. Y.

Charles Lord, Regina, Canada

Dr. A. L. Lugn, Lincoln, Nebr.

Louis Luh, Washington, D. C.

Maurice N. Marshall, Omaha, Nebr.

W. H. McCullough, Yakima, Wash.

Hubert W. Meyer, Schenectady, N. Y.

Margaret Lord Miller, Athens, Ga.

Victor Overman, Omaha, Nebr.

Eugene Patterson, Cincinnati, Ohio

Gilman Plunkett, Oakland, Calif.

Victor Porkorny, Arnold, Pa.

A. W. Prasse, St. Louis, Mo.

Doris Rogerson, Oakland, Calif.

J. H. Sammis, Peoria, Ill.

B. E. Schoenberger, Shaker Heights, Ohio

George Semonsen, San Francisco, Calif.

R. H. Shepley, San Francisco, Calif.

J. P. Skillen, Hamilton, Canada

Clifford Warren Smith, Saugatuck, Conn.

W. C. Smith, Whittier, Calif.

R. B. Stewart, Yellow Springs, Ohio

W. R. Stillings, Calgary, Canada

O. E. Stowell, Omaha, Nebr.

Allen Sweet, San Francisco, Calif.

Henry K. Tanaka, San Francisco, Calif.

R. A. Timada, Peoria, Ill.

Edward H. Towler, Oakland, Calif.

Lee Townsend, Oakland, Calif.

*J. K. Trafton, San Francisco, Calif.

*K. Utsumi, Oakland, Calif.

F. C. Ward, St. Joseph, Mo.

Freda Ward, St. Joseph, Mo.

Nowell Ward, Chicago, Ill.

Glenn L. Weber, Oakland, Calif.

H. E. West, Washington, D. C.

F. F. Wheeler, Bristol, Conn.

Edward Widdis, San Francisco, Calif.

Robert Wolber, Peoria, Ill.

* Denotes prize winners.

THE CAMERA CRAFT MONTHLY COMPETITIONS—EXPLAINED

It is well to understand at the start that the rules governing these competitions are purposely kept at a minimum, so that the competitions may be open to all without red tape and without complication. A competitor may take whatever action he desires that is not specifically denied by the rules. **Camera Craft** makes no copyright claim to the pictures which win awards, and their makers are entirely free to do with them as they wish. Do not bother to wonder if you may do this or that. You have complete liberty of action, provided only that you observe the few simple rules given below.

Prize Winners Widely Exhibited

The winning prints in these competitions are made up into Traveling Salons and circulated for exhibition and study to Camera Clubs throughout this country and Canada. To date 96 clubs have requested these shows so we feel entirely safe in saying that these pictures receive a wider exhibition than is possible by any other means.

Objects

- To promote the cause of pictorial photography in general.
- To provide our readers with a disinterested means of having their pictures evaluated in comparison with others.
- To provide a department in which ten pictures of merit may be shown, discussed, and analyzed each month.
- To provide an "open forum" for the discussion of these prints by printing communications from readers.
- To make this department instructive and helpful for all by the above means and by printing the technical data on each print.

Rules

■ Any one may enter. You are **not** required to be a member of a camera club, a subscriber to **Camera Craft**, or anything else. No entry fees. No entry blanks. No restrictions on size, or number. Mounts are not required.

■ There are two classes, "Advanced" and "Amateur." These groups are judged separately, with five awards in each class, ten awards in all. The ten winning prints are published in **Camera Craft** each month.

■ Prints must have makers name and address, the class in which they are to be entered (whether "Advanced" or "Amateur.") and the technical data (see below) regarding them, plainly marked on the back of each.

■ Prints shall be returned only when stamps sufficient to cover are enclosed with the pictures. Do not send stamps under separate cover as it is possible they may not be connected with the identity of the sender or prints.

■ Prints may be in black or sepia but tinted and painted photographs are barred

■ Prints must be in before the 4th of each month to be entered in the succeeding month's competition.

■ Prints winning prizes cannot be returned.

■ The object of the two classes, Advanced and Amateur, is to insure that individuals shall compete on as even terms as possible. Compare your prints with those shown as prize winners in the two classes, and decide with which group your pictures would most fairly compete. If in doubt enter first in the amateur class and then if successful move up to the advanced. In order to insure fairness and an equal chance to all, the judges reserve the right to move prints into the advanced class if the quality of the pictures seem to justify this.

Awards—Advanced Competition

First: Silver Medal.

Second: Photographic Merchandise, value \$5.00.

Third: Two years' subscription to **Camera Craft**.*

Fourth: Eighteen months' subscription to **Camera Craft**.*

Fifth: One year's subscription to **Camera Craft**.*

Awards—Amateur Competition

First: Bronze Medal.

Second: Photographic Merchandise, value of \$3.00.

Third: Eighteen months' subscription to **Camera Craft**.*

Fourth: One year's subscription to **Camera Craft**.*

Fifth: Six months' subscription to **Camera Craft**.*

* May be presented to a friend or divided and presented to friends at this or holiday time.

Technical Data

We request that the technical data be placed on the back of each print submitted to the competition. A complete technical description should cover the following points: Size and make of camera, make and focal length of lens; exposure time and aperture used; negative material; negative developer; filter; light source; (if artificial, the number of lights and the wattage, if outdoors, the time of day and the month); paper; print developer; special treatment. By "special treatment" we mean, any manipulation or procedure that is not covered by the above.

Exchange Feature of the Competitions

If a contributor desires to exchange his prints with other prize winners in the competitions he should mark on the back of his prints the words, "Will Exchange." His willingness to exchange will then be stated in **Camera Craft** along with the technical data which accompanies each prize winning picture. It must be understood that only those who have won prizes in these competitions are eligible for exchanges, and that only pictures which have appeared as prize winners in these competitions may be offered in exchange. Unless the phrase "prints will be exchanged with other prize winners in these competitions only" appears at the end of the technical data the maker of the picture is not willing to exchange, and consequently exchanges for that picture cannot be arranged. If you have won a prize and wish to make an exchange write to **Camera Craft** stating the print you wish to receive and the picture you are offering in return. **Camera Craft** will see that the request is forwarded and send the necessary addresses to both parties. It should be clearly understood that even though an individual has stated his desire to exchange he is not obligated to accept any particular exchange unless the picture offered is one he would like to own.

Selling Price For Prints May be Stated

Many a photographer is happy to sell an occasional print, not only because of the monetary return, but because it is pleasant to know that one's work is appreciated by others. **Camera Craft** will assist in this regard by printing a selling price along with the technical data which accompanies each of the prize winning prints when repro-

duced in the magazine, and when they are sent out as Traveling Salons. If you are willing to sell prints for private collections please state price, print size and mount size on the back of each print. If the sale of prints does not interest you please state "not for sale." No commission will be taken by **Camera Craft**.

Club Trophy Features of the Competitions

Four Silver Trophy Cups will be awarded to clubs making the best record in the Camera Craft Monthly Competitions each year. Awards will be made on the following basis:

1. Clubs will be divided into two groups—large and small on the basis of membership, and identical awards will be made to each of the two groups. This is to make sure that competing clubs will be of approximately the same size. Large clubs will be those whose membership is over 40. Small clubs are those with membership of 40 or less.
2. The four awards are as follows:
 - (a) To Large Club making highest total score in the Advanced Class.
 - (b) To Large Club making highest total score in the Amateur Class.
 - (c) To Small Club making highest total score in the Advanced Class.
 - (d) To Small Club making highest total score in the Amateur Class.
3. Points in each of the four divisions, Large and Small Clubs, Advanced and Amateur Classes are as follows:
5 points for First Award, 4 points for Second Award, 3 points for Third Award, 2 points for Fourth Award, 1 point for Fifth Award.
4. Each club has the opportunity of competing for two cups. One in the Advanced Class and one in the Amateur, but individuals within the club cannot enter in both classes. Individuals may choose the class in which they wish to compete, but the judges reserve the right to change entries from the Amateur to the Advanced class if the quality of the work seems to warrant it.
5. No individual may earn more than 15 points for his club.
6. It is well to understand that the conduct of this competition is in nowise changed by the addition of these annual club awards. Judging is still entirely on the basis of the individual print, and those who are not club members have the same chance of winning awards as formerly. The only difference is that now if a prize winner is a member of a club, his club will be credited with the proper number of points allocated for that prize.
7. Scoring for these cups begins with the January Competition, prints for which must reach this office on or before Dec. 4. It runs for 12 months concluding with the December competition. Prints for each succeeding competition must reach this office on or before the 4th of the preceding month.
8. Club name, makers name and address, and technical description of print must appear on the back of each picture.

What a Club Should Do

- Study the rules which appear on this page and the rules governing the competition in general which appear above. ■ Appoint a committee of one or two whose sole duty will be to collect and forward prints **each month and on time**.
- Divide your membership into two groups, one to compete in the Advanced Class, the other in the Amateur. It is not required that a club compete in both classes.
- Be sure and send each month as it is the total score that wins. Let's go!

Notes and Comments

U. C. Extension Courses

The group of courses in photography under the instruction of Mr. P. Douglas Anderson open at various dates from Jan. 6th onward. There will be courses for the beginner, the advanced worker, and the Miniature camera user in San Fran-

cisco, and courses for the advanced worker, and the course in Darkroom technique in Oakland. Lack of space prevents our giving a full listing of the various classes but full information will be supplied by the Univ. of Calif. Extension Division, 540 Powell St., San Francisco.

First All-American Candid Camera

The International Research Corporation is introducing the first All-American, precision-made 35 mm. miniature camera, with a full line of accessories including the unique combination enlarger-projector.



The new ARGUS miniature camera will sell for \$12.50.

It has visible automatic exposure counter for simple, quick automatic focusing. The optical eye-level view finder is built in. The sturdy bakelite cases come in different color combinations.

It has a rapid shutter (1/25-1/200 seconds) and f:4.5 anastigmat triple lens. It is possible to load and unload this camera in daylight and anyone can take snapshots, even interior scenes and project them in natural full colors by using a special color film. Sharp, clear enlargements in black and white can be made up to 8x10 inches and candid pictures can be made in theatres, clubs, offices and homes.

Several years of research work have been directed to solving the problems presented by the firms determination to supply a complete and efficient set of miniature camera equipment, including accessories, at a low cost. They have unquestionably succeeded in accomplishing some remarkable savings not only in the camera itself, which is shown above, but in such accessories as the enlarger and projector as well. It will pay you to write to the International Research Corporation, Dept. C, Ann Arbor, Mich., requesting full descriptive literature of this new equipment.

Variable Photoflood Control

Announced in this issue (see advertising

section) is the Variable Photoflood Control, a product of the El Kay Photo Products Co. of Newark, N. J. The device, which conforms strictly to Underwriters' Laboratories requirements, consists of a variable resistor unit which permits reduction of the voltage applied to Photoflood lamps and gives a ratio of about 4 to 1. Designed primarily for use with enlargers, it permits the dark room worker to adjust the amount of light which is to pass through a negative without touching the enlarger or its lens. The Variable Photoflood Control is not a series-parallel switch. Actually it is a sturdy, reliable unit, built according to correct electrical principles, which allows for utilizing the Photoflood lamp from 1/4 to 100% of its maximum brilliancy. The face dial of the control is marked off clockwise from 0 to 100 and a simple twist of the indicator increases or decreases the light. Due to the fact that the lamp is being burned below maximum brilliancy most of the time, the life and the efficiency of the Photoflood light source is greatly increased. Salon workers will thus be enabled to make greater use of the chloride and chlori-bromide papers and thus obtain the tonal control possible with such papers.

A circular describing the apparatus can be obtained from the manufacturers, El Kay Photo Products Co., Newark, N. J., and the Control itself can be seen at most photo supply shops.

Heinco Film Agitator

The one real control which the photographer has in the development of film is the time of development. A desired scale of negative cannot be consistently obtained unless the effective time of development is accurately known. Agitation is necessary during development if streaks due to uneven development are to be avoided. But agitation effects the time of development (the more the agitation the more rapid the developing action) consequently if the effective time of development is to be accurately known uniform agitation is necessary. The answer is a mechanical agitator. The Heinco Agitator is powered by a Universal AC-DC 110 Volt Motor. It may be adjusted to the Reelo or Correx tanks in sizes taking 35

mm. film and No. 120, 127, and 620 film. It can be supplied to fit other tanks at a slight additional cost. It has the ideal movement in that it oscillates back and forth, thus eliminating the danger of setting up circulation of the solution in one direction which would defeat the purpose of agitation. The machine is distributed by the Luma Camera Service, 330 West 42nd St., New York, N. Y. and sells for \$22.50. The firm will gladly send you descriptive circulars.

"Pictures at Night" Contest

Opportunity to win cash prizes totaling \$2,500 is offered to amateur photographers in a "Pictures-At-Night" contest opening January 1, 1936, for three months by the Eastman Kodak Company, Rochester, N. Y. This contest follows a similar one just completed by the General Electric Company, manufacturers of photo lamps.

In the Eastman contest 89 cash awards will be made each month—January, February and March—and a \$250 grand award at the end for pictures taken at night, either indoors or outdoors, with artificial light. The awards are divided as follows:

Two of	\$100 each
Three of	\$ 50 each
Four of	\$ 25 each
Ten of	\$ 10 each
Twenty of	\$ 5 each
Fifty of	\$ 2 each

The \$250 grand award will be given to one of the six winners of the \$100 awards, hence the grand award winner will receive \$350 for a single picture.

The pictures must be made on or after January 1, 1936. All entries must be postmarked not later than midnight, February 15, March 15, and April 15, 1936, the three closing dates. The contest will be open to any amateur in the United States and Canada. Winners will be chosen wholly on subject interest and appeal, not on technical excellence. Prize-winning pictures become the property of the Eastman Kodak Company for advertising, publication and exhibition.

Burrough Wellcome Offers Dealer Aids

D. R. Hutchison, 2015 Jefferson St., San Francisco, local representative of Burroughs Wellcome & Co. (U. S. A.), Inc., 9 and 11 East 41st St., New York, N. Y., called recently and showed

some new display material for dealers for the Burroughs Wellcome & Co items.

There were giant cartoons of Tabloid Rytol, Tabloid Green Toner, Soloid Photographic Stains, and showcards for Tabloid Rytol (Card No. 0724), Wellcome Photographic Calculator (Cards No. 0731 and No. 0640), Tabloid Toners (Card No. 0710), and Soloid Stains.

There is also a card for the company's newest product, Tabloid Fine Grain Developer (Card No. 0736).

All of the above are available to dealers and can be requisitioned from their wholesale distributors.

Showcards can be requisitioned by numbers.

Agfa Superpan Film

Announcement has been made by Agfa Ansco Corporation of a new improved Superpan Film available in all popular sizes of film pack and roll film. Although carrying the same name as the former Superpan, the new product has been so greatly improved in every respect that it is virtually a different material.

The new Superpan has been improved in speed, latitude, color sensitivity, anti-halation characteristics, and several other features. Its speed is equal in daylight to that of the recently introduced Super Plenachrome and is half again as fast as that film when used in artificial light. Its amazing sensitivity makes snapshots at night, as well as daytime winter photographs, surprisingly easy to take. The latitude or leeway in exposure of the new Superpan Film allows wide variations in exposure without appreciably affecting the quality of the results. This wide latitude is of great importance to every amateur, as it insures good results and brings to a minimum the failures due to incorrect exposure. The color sensitivity has been somewhat altered to make the tonal reproduction of every color more nearly exact under daylight as well as artificial illumination.

The brilliancy of the Superpan emulsion has been increased so that negatives have a natural snap ordinarily not found with panchromatic film. The film also has a surface coating of inert gela-

tine to protect it against scratching and marring during handling. The non-abrasion coating does not affect the speed or developing time. The anti-halation protection, which consists of a green dye back-coating, has been tremendously improved so that definition and fine detail are preserved. In spite of the increased speed, color sensitivity, and brilliance of the new Superpan emulsion, the grain size has not been impaired. Prices for the new Superpan Film have not been increased.

Zeiss Magazine

Carl Zeiss, Inc., 485 Fifth Ave., New York, N. Y., have just published the first issue of what is to be a monthly magazine devoted to the interests of those using Zeiss-Ikon cameras and other Zeiss equipment. The magazine consists of twenty pages, about the same page size as Camera Craft, and single copies sell for ten cents, annual subscription \$1.00. The magazine is edited by Herbert C. McKay and in the first issue we find articles on Contax Adventures in Tibet, by C. D. Holton, Fine Grain Development, by Herbert C. McKay, The Zeiss-Ikon Contameter, by Fenwick G. Small, The Contax in Newspaper Work, by C. H. Stieglitz, Cropping, by Remie Lohse, and other shorter items. All of the principle articles are fully illustrated, and the general make-up of the magazine is attractively fresh and modern. The magazine will conduct a monthly competition, for pictures taken with Zeiss-Ikon equipment. First, second, and third prizes will be awarded each month the winners receiving the equivalent of \$40.00, \$20.00, and \$10.00, list price in Zeiss-Ikon cameras and accessories. A Grand Award will be made every six months, for the best picture among the prize winners.

Look for a copy at your dealers or write to the above address for a sample copy.

New Lenses Announced

The already complete battery of lenses for the Leica camera is now being added

to, according to E. Leitz, Inc., 60 East 10th St., New York City. Three new superb lenses have recently been made available for use on the Leica—an extremely wide-angle, a new special soft-focus portrait, and an extremely long-focus telephoto.

The Hektor f:6.3, 28 mm. lens appeals to those workers who require an extremely wide-angle objective which at the same time embodies certain fundamental optical characteristics which are not always to be found in lenses of this type.

The Thambar f:2.2, 90 mm. lens is of revolutionary design producing a plasticity and optical softness not produced in any other way. For portraits and pictorial work it is ideal, its speed making it doubly valuable. An auxiliary glass "central stop" controls the degree of softness. When stopped down to f:9 or more, the Thambar reverts automatically into a sharp-cutting lens, thus it is both a soft-focus and sharp lens at will.

The Telyt f:4.5, 200 mm. lens is a true telephoto lens which is used in conjunction with a mirror reflex focusing device. Here is the lens to pull in distant objects, producing them as close-ups on the negative. The visual focusing device, equipped with two special magnifiers, assures critical focusing with the greatest of ease.

All lenses (excepting the Telyt which focuses through the special mirror reflex device) couple automatically with the famous "Autofocal" built-in range finder, making failures due to faulty focusing impossible.

The new Leica lens booklet "The Interchangeable Leica Lenses" (booklet 1243) is now available on request. It gives complete details about each of the thirteen Leica lenses now on the market. Just drop a card or letter to E. Leitz, Inc., 60 East 10th St., New York City, or to Spindler & Sauppe, Inc., 86 Third St., San Francisco, and 811 W. 7th St., Los Angeles, Calif., and your copy will be promptly sent to you.

Classified Advertisements

Rate: 6 cents a word: minimum \$1.50 each insertion, prepaid. This is purely a convenience department for the reader and for that purpose offers Classified Advertisements at cost. Dealer merchandising ads must be placed in display space at 35 cents per agate line, 10 agate lines minimum. Position Wanted ads, one insertion free. Copy for this department must reach us on or before the 15th.

Items advertised in these columns may be purchased C.O.D. subject to examination and C.O.D. subject to ten days free trial if sent by express. If in doubt, safeguard yourself.

OUTFITS FOR SALE

◆National Graflex, Series I. Just factory overhauled. Complete with 3.5 lens, case and filter. \$45.00. James K. Colehour, 936 Pomona Ave., Berkeley, Calif.

◆Stereo Hawkeye, 3½x7, uses 101 roll film. Good condition, \$10.00. Stanley Harzfeld, 3830 Bronx Blvd., New York, N. Y.

◆Paper positive camera, F:2.5 lens, \$40.00 8x10 studio camera with lens and stand, \$40.00. 5x7 view camera with focal plane shutter, \$15.00. Kodak amateur printer, \$5.00. 4x5 Poco plate camera with lens and two holders, \$7.00. Auto Graflex shutter and plate holder back for 5x7, \$8.00. Twin arc light, \$7.00. Many other items. Jesse Rorabaugh, Beatrice, Nebr.

◆Auto Graflex, revolving back, 3¼x4¼, 6¼ inch B. & L. Zeiss lens, cut film magazine and sole leather carrying case. All in excellent condition. Worth \$200.00, \$100.00 takes it. Address C.M.S., Care Camera Craft, 703 Market St., San Francisco, Calif.

◆6 Thorton Pickard plate holders, ½ plate with film sheaths, reducing kits and focusing screen to fit 5x7 camera. 6" Portrait lens F:4 rack and pinion. Clarke, care Camera Craft, 703 Market St., San Francisco, Calif.

◆2¼x2¼ new model Rolleicord leather covered with F:3.8 Triotar lens in Everready case, practically new. Cost \$66.25, sacrifice \$45.00. W. W. T., Care Camera Craft, 703 Market St., San Francisco, Calif.

LENSES FOR SALE

◆One 18 in. F:4.5 Cooke Protrellic Lens with diffusing device. Costs \$414.00. This one is like new—only \$275.00. I. A. Koepsell, 95 S. Lexington Ave., St. Paul, Minn.

INCOME from your camera instead of expense. Low-cost, home course teaches you to make photographs for magazines, newspapers, advertisers. Tremendous demand. Earn good money wherever you live. Free book. **Universal Photographers**, Dept. K, 10 West 33rd St., New York.

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BARGAINS:

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Model D Leica, Elmar f3.5	80.00
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1600 Post St., San Francisco Ph. WA 4484

POSITIONS WANTED

◆Conscientious young man, 21, high school graduate and art student wishes position with chances for advancement. Two years experience in studio winning 1935 salon honors at Sandusky, Ohio. Good at layouts, lettering and designing. References gladly. Archie Thompson, Clatskanie, Oregon.

LENSES WANTED

◆Hektor or Elmar 135mm. lens for Model D Leica. State condition and price. Address G. S., Care Camera Craft, 703 Market St., San Francisco, Calif.

OUTFITS WANTED

◆Good 4x4 Rolleiflex F:2.8 Tessar. Have Rolleicord 6x6 F:3.8 Triotar and pair of 8 power French binoculars. Sam Plescia, 8955 Carson St., Culver City, Calif.

◆5x7 or 8x10 focal plane shutter, 8x10 must have ground glass back, with or without film holders. 8x10 Elwood Commercial Enlarger. G. F. Johnsen, 770 Iglehart Ave., St. Paul, Minn.

◆Cash for Graflex box 4x5 Series D. Must be bargain and like new. F.P.A. and magazine. O. F. Smith, 715 E. 4th St., Santa Ana, Calif.

Send for our new catalog—latest
and complete.

CAMERA CRAFT

703 Market Street San Francisco, Calif.

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CAMERA



"Tiroler Schutzen"

Herbert Niclatsch

19th Los Angeles International Salon

CRAFT

February 1936

THE STORY OF A SALON
PRIMARY PAPER NEGATIVES
PAPER DEVELOPERS

PRICE 25c

Fred R. Archer
Dr. H'Darcy Power, F.R.P.S.
Don Carlos Hines, M. D.

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The Story Of A Salon

Fred R. Archer

THE bells have stopped ringing and the whistles have stopped blowing—The new year is here and with it another Salon of the Camera Pictorialists of Los Angeles, the nineteenth showing of this annual event.

Since nineteen hundred and fourteen the Camera Pictorialists of Los Angeles, have existed with one thing uppermost in their minds, this annual Salon. The membership, at present consisting of twenty-four men, is brought together once a month at a round table meeting and talk of things photographic and otherwise while they enjoy some light repast but the only business the organization has is focused on the yearly event—The Salon, which is by no means a small undertaking.

Let's take a glance behind the scenes of this Salon.

It is being held this year, as it has been since its inception, in the galleries of the Los Angeles Museum of History, Science and Art located in Exposition Park almost in the shadows of the gigantic Olympic Stadium with its Olympic torch standing high against the western sky.

The museum is presided over by Mr. William Alanson Bryan, its director, and a great deal of credit is due Mr. Bryan and his associates for making this one of the outstanding annual photographic exhibitions of the American continent.

The museum's part in the work of holding this exhibition is under the careful eye of Miss Louise Upton, assistant curator of art, her assistant Miss Virginia Stoneman and the genial H. C. Edwards, assistant custodian in active charge of the receiving and shipping department.

Early in the year entry blanks are assembled, printed and mailed to thousands of prospective exhibitors. This in itself is a big undertaking, checking of the mailing lists and trying to see that everyone interested in the exhibition game will receive a blank.

These blanks call for all entries to be in by the fifteenth of November. This is partially a protective measure to keep the packages out of the

crush of Christmas mail and to allow time for printing a suitable catalog and to arrange for some advance publicity.

As the prints arrive they are all numbered on the back in the order of their receipt. Duplicate numbers are entered in a book under the author's name. The wrappings are then put aside in the event they are needed for future reference to check return address. The original packings unless badly damaged are kept in another pile to return with the prints at the end of the show.

The prints are stacked on shelves in piles of one hundred. Thus any print can be available at any time by looking under the author's name in the book, ascertaining the print number and taking it from its pile.

Shortly after the entry closing date the Pictorialists meet at the museum to assist in the work connected with the judging.

In the nineteen years of international shows and a few other ones held prior to the first international, the organization had, as Mr. James N. Doolittle writes in the foreword of the new catalog, "resorted to a number of expedients in an effort to solve the jury problem." It has striven to remove from participation in its Annual Salons the element of competition, substituting in its stead a system of segregating the good from the - not - so - good in a manner calculated to insure to the exhibitor that acceptance of even one print was an honor not to be reckoned upon a basis of numerical averages. It has tried to emphasize the principle that a show can be no better than its acceptance by the public, and selections in latter years, at least, have been made with this thought as a guiding motive.

Contributors to most of the exhibitions throughout the world have exposed themselves to grave risks. Selections have been based upon the composite opinions of men too often entirely out of touch with the medium upon which they presumed to sit in judgment. Little wonder, therefore, that one encountered in past shows not a well determined standard of acceptance but a collection of subjects assembled upon a basis of "barter and trade."

Experience is built, more or less, upon experiment. The Camera Pictorialists of Los Angeles, having followed every plan of print selection since exhibitions have been known, have arrived at the belief that only upon a one man jury can they place dependence for the hanging of a well organized group of pictures, truly representative of pictorial photography and with the breadth of appeal which shall assure continued public appreciation.

So a juror has to be selected—a man who knows pictures. One who has accredited himself with other judges by having a good salon record of some years standing. One who is abreast of the times and whose mind is open to the changes and trend of the times. One without violent prejudices and above all one who can, no matter what his own type of work may be, see good in all other types of work *if good is there*. In other words one who knows that the audience who will come to see this show will be made up from all walks of life and will like and dislike different things, all of them will in their own ways be right, so the competent juror must be able to see good from all the different angles *if there is good there to see*.



"Durst"

Jen Denkstein

19th Los Angeles International Salon

The night of the judging finds all the entries standing in a row around the walls of the galleries (eight galleries being utilized this year to accommodate the entries of over a thousand prints). The judge walks slowly around these eight galleries to get a perspective of the whole. Now a process of elimination begins and here and there appear prints faced against the walls, these are the obviously out and are picked up and taken away.

Trip after trip around these galleries stooping innumerable times for closer examination and the "segregating of the good from the - not - so - good" continues. This year the judging continued from seven P. M. until two A.M. and required no less than fifteen trips around the eight galleries before the judge was satisfied—a tremendous undertaking, a lot of physical work as well as a great mental strain.

Upon the shoulders of this writer fell this year's judicial mantle and I can assure you it was with a feeling of temerity that I approached the job, this despite the fact that both my predecessors, Mr. Doolittle in nineteen thirty-four and Mr. Fred Dapprich last year, had acquitted themselves with great credit.

With the actual work in hand all this feeling left and with the one ideal in mind, that of giving to the public "a well organized group of pictures, truly representative of pictorial photography" the work went on.

After going back to the Museum a few days later and rechecking the "good prints" and "the - not - so - good" according to the standard set by the whole it is without any excess of ego that the Camera Pictorialists and the writer know that this is the best as well as the largest show they have ever hung.

The writer does not want credit for this nor does he feel that he has rendered any Solomon-like judgments. The show is based upon the material sent in and can be no better than the exhibitors make it. It is their show and this year they did a good job.

The standard of prints sent in was very high—Photography is indeed looking up—The interest is keener, the competition greater and future shows will be better and better if not bigger and better.

The judging over, back the prints go to the receiving and storing room. Here all the accepted prints are entered in another book under their makers' names arranged alphabetically. The entry blanks are marked correspondingly, and the prints are again separated into piles according to their numbers.

The catalog listing is now made, names and titles are deciphered and numbers are put on the mounts with slip on corners according to the catalog. The prints go back on the shelves and are covered with cloth to protect them.

Prints have been selected for reproduction, and for publicity in the Catalog. A selection has been sent to Mr. Young of CAMERA CRAFT for his use. Cuts are made from these and they are quickly returned.

The catalog is checked and rechecked sent to the printer, proofs are checked and the catalog is printed. A big job in itself. Publicity is sent out and all details taken care of. Prints which arrive from Foreign shores unmounted are placed upon suitable mounts. The show is ready for hanging.



"Haying"

William Rittase

19th Los Angeles International Salon

The museums hanging crew get busy. The prints are placed upon the walls and large sheets of glass placed over them—January first—New Years Day—The doors open—The Salon is on—The public comes to view—For a whole month they will come to view and acclaim. Now let's have a general look at the show.

The subject matter seems to have a more universal appeal and picture value is again superseding technique. Not that technique is suffering, in fact it is far superior to a few years ago and is becoming better all the time, but no picture was ever made by draping technique over uninteresting ideas. There must be a picture underneath and technique to enhance it.

There is a decided tendency towards large prints, so much so that the small delicate print is nowadays almost lost on the walls and the larger striking prints take the attention. The tendency is also away from the small picture on the huge mount.

There were a few prints though that suffered greatly by being placed upon too large a mounting. When a print is to stand alone segregated from the others by a large space around it, it has to be *good* to hold its own. The large mount defeats the purpose for which it is usually intended, that of making people see it above others around it and it will draw attention to the defects, if any, and unless the print is exceptionally good it is taking up space that could be justly used by other prints. If the print is good it needs no extra amount of backing to enhance it.

The gaudy vari-color underlaying gives way to plainer mounting. The exhibitor is making better pictures and no longer does he have to set up a competing interest to draw the eye away from the print.

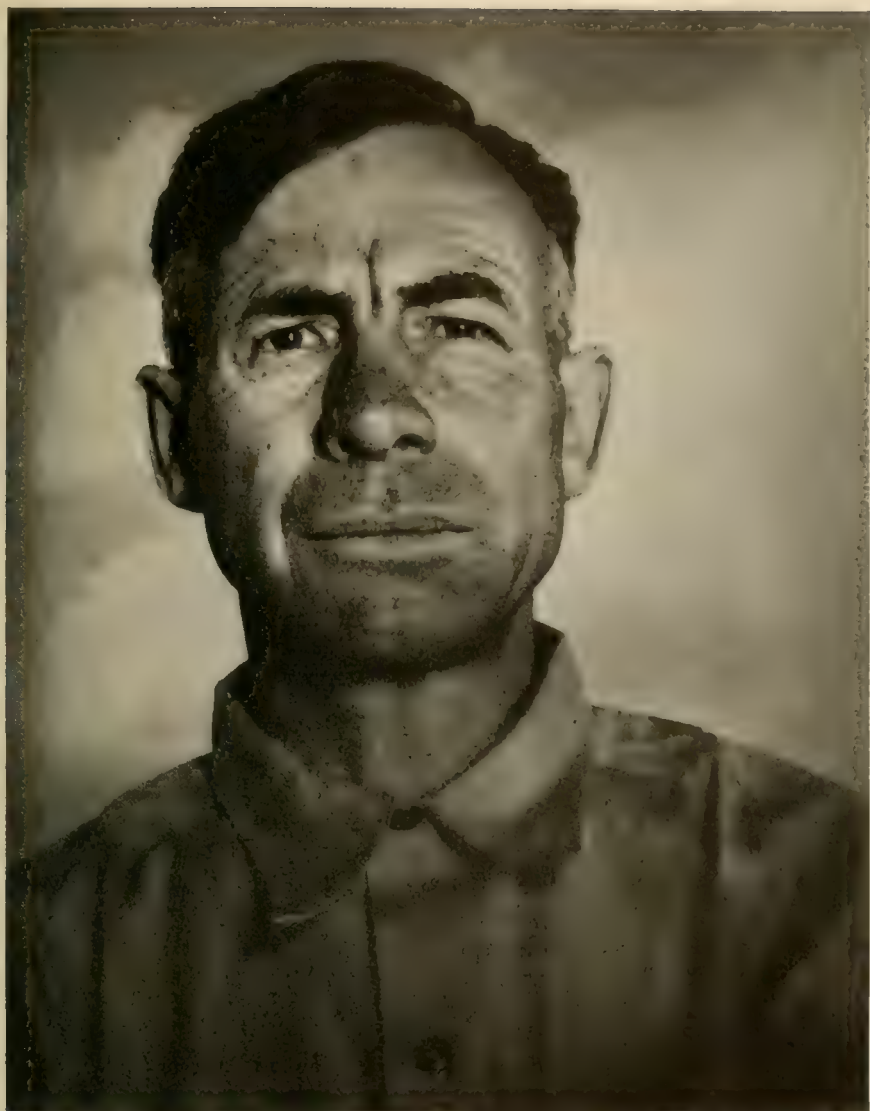
A future step to better exhibitions will be to pay more attention to the walls—to standardize, somewhat, the mount sizes so that the unevenness of large against small can be minimized.

In writing about the San Diego Salon last year (CAMERA CRAFT August) I mentioned a tendency for the soft focus lens to creep back amongst the European workers. It is still creeping. Some of the dealers have started to advertise them in this country. I can't help feeling that we are due for another epidemic, among the newer workers of over soft fuzzy-graphs as we used to call them. The older workers I know will never go very soft again.

Maybe this softness is an attempt to cover up poor technique in the miniature field. If so I hope it doesn't get far because the perfecting of the technique of miniature photography has had its good influences upon us all.

Ante Kornic from Ljubljana, Jugoslavia authors a soft focus print of a young girl seated nude in a shallow stream surrounded by splashing sunlight called "All in Pearls" a perfect title and a fine print. No apology is needed for the lens. The maker knows when and where to use it but if you, my friends, must use a soft focus lens—be careful.

There were quite a few flower studies and from far off Italy, Mario Vittone sends a print of a small group of Margueretes against a cloud flecked sky—simple but magnificent. *Simplicity oftentimes tends to make a picture.* He also sends a print of a straw hat placed over some stalks of



"The Toiler"

Henry E. Crawford

19th Los Angeles International Salon

wheat—a simple composition but so expertly done that one feels that he could pick the hat right off the wall. Quality plus. *Truthful rendering oftentimes tends to make a picture.*

Dorothy Wildings beautiful rendering of beauty shows us that *beauty, beautifully rendered oftentimes tends to make a picture.* (See Jan. frontispiece)

The toiler by Henry Crawford is a strong portrait study. When I think of how Crawford toiled with that picture—a desert back-ground, a mountain back-ground, and at last a simple clouded sky behind the head—That toil scarred face needs no background to help it. The story is in the face but one is reminded that *hard work on the part of the author oftentimes tends to make a picture.*

In "Tiroler Schutzen" (see cover), Herbert Niclatsch has a candid shot of three men talking, a common subject but done so that it is interesting—No one is looking at the camera and we feel their interest in some happening down the street. *Naturalness oftentimes tends to make a picture.*

Wm. Rittase sends a picture of "Haying" shot through the spokes of the wheel of a hay rake. In this picture *view point tends to make a picture.* So you see there is no rule, anything you want to do will make a picture. What you have to do is *to do it well.*

The Austrian-Czechoslovakian, group are still sending out their 11x14 glossy prints, quite a contrast to the 14x17 Gevaluxe prints by Hawkins of England or the tri-colored Carbro's by Doolittle and the oils of Misonne, but one would be hard put to choose one print and say "This is the best."

Process prints are in a smaller minority than heretofore. Most workers sticking to the straight enlarging papers, well—there's nothing wrong with a good bromide. The author of the print is the one to say what medium he wants to use to display his ware. If he makes a good picture and *does it well* he has succeeded regardless of what you or I might say regarding the process.

The Salon this year contains four hundred and three prints from various parts of the globe. Westward, Eastward and from North and South they came. From Australia, from Germany, from Spain, Norway, Poland, Japan, Dutch East Indies, Jugoslavia, Italy, India, Hungary, Netherlands, France, England, China, Czechoslovakia, Belgium, Russia, The Phillipines, Austria, Canada and all points of these United States. Truly the interest in pictorial photography is looking up.

When the Salon has run its allotted time, off the walls come the prints and back to the shipping room to be sorted, packed, wrapped and addressed and away they go North, South, East and West. The show is over until next year. Rest? No, plans must be made for the Twentieth International. Entry blanks will be mailed towards the middle of the year. We'll be hoping to see you represented on our walls.

Other pictures from the 19th Los Angeles International Salon, some of which are mentioned in this article may be seen on cover, and on pages 71, 75, and 79 of this issue; also Jan. frontispiece.—Ed.



"Icicles"

Oldrick Kindl

19th Los Angeles International Salon

Primary Paper Negatives

Dr. H. D'Arcy Power, F.R.P.S.

THE term Primary is here used to distinguish the negatives on paper made directly from the objects photographed, and the positive made by printing through (not from) the same as though they were glass or celluloid. The distinction is important because most of the descriptions recently published apply to the making of enlarged paper negatives from glass or celluloid negatives by way of a positive transparency. I am not denying the value of this procedure as a step in modifying the final result as is testified by the excellent results obtained by some of our prominent workers who have habitually used it. What is here reported has nothing to do with this indirect method but refers solely to negatives made in the camera and printed through in the same way as though they were celluloid or glass. They will hereafter be called Primary Paper Negatives.

Primary paper negatives have a long history, for the photography that we practice today had its origin in the paper negative that Fox Talbot made on a piece of plain salted paper and reported to the Royal Society in 1839; Niepce and Daguerre may or may not have preceded this with the Daguerreotype like the Neanderthal man; this made a wonderful beginning and then fell by the way. Paper made way for glass and celluloid but never died out entirely and only suffered a temporary eclipse by reason of the public demand for pictures showing unnatural detail and the fact that manufacturers have so far failed to show the least interest in the matter. My own interest in the subject dates back to 1907 when I published an illustrated article in the pages of CAMERA CRAFT from which I will make a few quotations:

"Let us look at the advantages that paper offers: First of all it gives the cheapest negative, which not important in the case of small negatives is otherwise when such sizes as 11x14 are called for. It is the lightest negative to carry in the field and the easiest to store at home. A paper-

Illustrating the definition and detail and also the color rendition possible with primary paper negatives. Scene includes red brick, slate roof, blue grey window frames, violet curtains, and white blinds.



negative is absolutely proof against halation and in the matter of control is ideal; permitting, as it so easily does of removals, additions, corrections and changes in tonality, such as are quite out of the question with glass or celluloid. To the pictorialist this consideration is all important. For example we have a paper negative to correct, say of a woodland scene. We have made a print from it and found that some of the planes are wrong in tonality, the shadows under a receding line of shrubs are too dark; so also are the shadow sides of the trees. Some of the foreground is too light and lacking in detail. The light falls on the foliage in that distressingly spotty way that spoils so many forest scenes, many of the branches run into unpleasant lines, such as would be left out as a matter of course in an artist's sketch. This is a formidable but common list of troubles but easily remedied in a paper negative. (The way of doing so will be considered further on)."

Twenty-eight years have flown since I wrote the above, which, owing to the slowness of the bromide paper then available, fell on stony ground. Today matters are different and very fast bromides are at the disposal of everybody, while the exposure problem is further simplified by the large aperture lenses now in common use. A little over a year ago I decided to submit the problem to a thorough examination in the light of our present advantages, and an awakening interest on the part of many serious workers. We must first understand our tools before we use them, so let us consider the nature of a sheet of bromide and what happens to it, when employed to make a negative and print therefrom:

Let us first consider what happens when a photographic image is projected on to the surface of a sheet of bromide paper. The paper consists of three layers; an outer layer of hardened gelatine, whose surface may be polished, smooth, or rough in varying degrees; a middle coat of silver gelatine emulsion and an inner coat of varying thickness and quality.

according to the maker and brand. The quality of each of these layers has its specific influence on the resulting negative image or on the image of the positive, where the rays encounter the same layers but in the opposite direction. When transmitted from the lens to the paper the rays first encounter the transparent gelatine, whereas in printing the positive they move in the opposite direction being first modified by the paper base, then by the silver haloid granules of the middle coat, and lastly affected by their passage through the gelatine surfacing coat. The gelatine layer may be polished as in glossy papers, or conform to the paper surface as in the rough varieties. In the first case the rays suffer no irregular deviations and the image is correspondingly sharp when it reaches the middle sensitive coat of silver; with the rough varieties irregular deflections and encounters produce a proportionate softening of the image. Both theory and practice call for a glossy or very smooth paper for the paper negative. So much for the first coat. The emulsion layer determines the rapidity of the paper, of which there are many degrees within the forms adapted to our purpose; thus No. 1 of the appended list gives a printable negative of an average landscape with a minimum exposure of two seconds, whereas No. 9 gave the same under like conditions in one-fifteenth of a second, and this at an aperture of $F/8$. With the same conditions and a lens working at $F/4$, instantaneous work would be simple. There is, I believe, no color sensitive paper made, but also no reason why there should not be were there a demand. Curiously I noticed last autumn when photographing some beech trees with sharply marked areas of yellow changed foliage, taking the same view on an Ilford Chromatic Plate and the same firm's Velvet bromide, it was the latter that clearly showed the changed branches. The emulsion layer may differ in the fineness of its constituent granules that may count in making enlargements. The paper layer may differ in two respects, in its thickness and the nature of its pulp; these have no influence on the negative image but are decisive in transmitting this image to give a print or enlargement. The thickness of a paper determines the printing time, which in the case of enlargements is an important matter; but much more so is a close and uniform structure, seeing that some part of this may be recorded as part of the positive image. With a given thickness of paper structural differences may cancel one another out, so that as between two papers of the same structure but different thickness, the thicker paper may give the best print. To sum up, in recording the image the rays may suffer distortion from roughness of surface and minor deflection by the gelatine coat only, whereas when this image is fixed and used as a negative, it must again run the gauntlet of these troubles and also that, often fatally, contributed by the paper backing. It is on this account that paper negatives often appear perfect to the eye but nevertheless yield unsatisfactory positives. It is well to understand these factors, but in the end the suitability of a paper must be determined by careful experiment under standardized conditions. In the past year I have so tested a large number of papers, some bought, some contributed by the manufacturers. I expect to test many more, the small group I here report have all yielded me good prints and enlargements. It is to be remembered that the qualities of hardness, sharpness,

Self-Portrait of the author. Primary paper negative, exposure 1 sec. at F:8, print on Gevaluxe.



and softness, etc., receive an impress from the paper used for the positive, and that in choosing the printing paper this must be borne in mind.

Papers Tested

The following list of papers for negatives and prints have been carefully tested and for the moment may be considered final, but new bromides constantly appear among which we may hope for yet more suitable forms and at last the paper we are waiting for, grainless in texture: thin, but not transparent, orthochromatic, and as rapid as a medium plate. With that we would have all the advantages of plates and films, plus the special qualities that make its use under present conditions still worthwhile to the artist.

Technics

So far as the development of negatives is concerned technics are the same as with plates, but as the sensitized silver is attacked from behind as well as through the front, development may proceed too fast and it is better to use a diluted developer or else remove to water as soon as the image appears and again submerge in the developer for completion and a further deposit, making the negative from four to ten times as dense as a positive print.

While it is true that you can print through a negative so dense as to be impenetrable to sight against a strong light, yet my experience has led me to be content with a moderate amount of density, which if insufficient can be always increased by a chromium intensification. When general reduction is necessary there is the choice between the Farmer's reducer of Potassium ferricyanide and hypo or, the Potassium permanganate and sulphuric acid reducer (which I greatly prefer), but in either case the bath must be much weaker than that used for plates and care taken to stop short in time. I mostly sulphide my paper negatives

to insure permanency and always give the ten minutes in a ten per cent formaline bath, and valuable negatives likely to be enlarged should be dried between blotters and finally ironed between dry blotters and preserved quite flat. In the enlarging lantern it is well to lay a piece of heavy glass on the negative to prevent the heat causing crumpling or distortion.

The Plate-holder

The fixing of the paper in the plate-holder is a problem that may readily dishearten a beginner. Paper lacks the resilience of celluloid and needs fixation along its upper and lower border. I will not recount the many ways I have secured this, most of them requiring time and care and describe the two methods I now employ. As paper has so little thickness it is necessary to support it upon a sheet of glass or rigid cardboard of the same thickness that a plate would occupy. Most workers can supply the first from old or spoilt negatives but the use of cardboard means a great saving of weight, but great care must be exercised that it is of the rigid kind; it must be cut into the sizes of the plates it is to substitute. Two ways are open to attach the paper: either a small strap of adhesive tape may be gummed diagonally across each corner under which the bromide paper can be readily pushed, or, the edge of the support may be lightly touched with a rubber adhesive to which the back of the bromide paper will stick. Some plate-holders have the rebate, under which the glass negative is held, sufficiently deep to slip in the paper negative. All this is not nearly as troublesome as it sounds, but certainly we urgently need the paper film-pack.

Exposure

Reference has already been made to the great difference in the sensitiveness of the brands of paper on the market, and it is to be strongly recommended that one of the most rigid forms on the tested list be employed and not departed from. Practice will soon teach the worker where he stands, but it is easy to make a test exposure on a still-life subject under normal lighting and then do the same, giving, say, ten times as long on a paper negative, develop both exposures together until the film picture is satisfactorily dense; at this point fix both and compare them. If the paper negative is weaker than the other the test is tried again with a higher ratio $\times 15$ or 20 until a working number has been obtained, which should be marked on each kind of paper, if more than one kind is used.

Papers tested, and found adaptable to the production of negatives, and also in some cases to positives. Single weight papers are obligatory. Use normal grades except for special purposes. Contrasty grades require longer exposure; soft grades slightly less.

- No. 1. Kodak Platino Matte Smooth.
2. " Permanent Smooth.
3. " Velvet.
4. " Kodaline.
5. Agfa Velvet.
6. " Glossy.



Unretouched print from primary paper negative.

7. " Matte.
- 8 Ilford Velvet.
9. " Special Smooth.
10. " Glossy.
11. " Photo-mechanical.
12. " Record.
13. Dassonville's Charcoal Black No. 5.
 Papers particularly adapted for prints and enlargements
 These can be either single or double weight
14. Illingsworths Bromide de Luxe. Is my choice for most work
15. " Selvo.
16. Kodak Royal, Rough
17. " P. M.C.
18. Ilford Rough Matte
19. " Natural grain
20. " Photo-mechanical for technical sharp reproduction.
21. Dassonville's Charcoal Black.
22. Gaeverts Gevaluxe. Both Charcoal Black and Gevaluxe
 give pure intense blacks and a long scale of
 gradation.
23. Gas-light papers, Kodak, Agfa, and Ilfords are excellent where
 sharp detail is sought, but not adapted for bringing out the
 best and special characteristics of paper negatives.

Corrections and Modifications of the Negative

What is here referred to has nothing to do with what has come to be called Montage, which from what I have seen of it, in the hands of

some of its gifted exponents, is an unlimited modification of the objects photographed to produce a hybrid picture in accordance with a thought out goal. In art such efforts have generally failed, but I pass no judgment on their legitimacy.

Photography has only very relative truth when applied to the fields in which it is most employed, namely landscape and portraiture. Its drawing is reasonably accurate but not so when halation obliterates the lines of the window frames, and turns the beauty of a sunlit leafy grove into a confused mass of white spots; nor are the forms of faces correctly represented as they depart from the centre of the line of sight. In the matter of tone matters are worse; the receiving surface may be insensitive to its finer gradations, and fall down entirely when seeking to do justice to color tone relations; the bright yellow patch on a dark blue background appears in the photograph as a black patch on a white background, and so on. If art is to concern itself with what the eye and not the lens sees then its deficiencies must be corrected by non-photographic measures of control. It is to these that I now draw attention. The general density of a negative makes a great difference in the print or enlargement, a high key being necessary for the best rendition of open landscape and atmosphere, while mass subjects call for full density and this is particularly the case in portraiture, where the paper negative is at its best. When these qualities are not present in the original negative reduction or intensification will be called for. My own practice is to bleach all negatives, paper or otherwise, in a 1% hydrochloric acid permanganate of potash solution, enough of the latter to keep the solution bright red, wash well, and fully re-develop. A great improvement in the negative is often found; after noting this, reduction or intensification may be proceeded with. *Never oil a whole negative*, it causes unnecessary granularity; it is only allowable where small areas of the print are lacking in depth of tone.

Altering the gradation of tone in small areas.

The means employed may be chemical or physical. To darken an area on the print the corresponding area of the negative may be directly lightened by applying a very weak solution of permanganate of potassium acidulated with Sulphuric acid, by means of a small swab of cotton-wool, pressed almost dry. An alternative is to use Hydrochloric acid instead of sulphuric, when if an error has been made it may be made good by washing and redeveloping in whole or part. For very small areas attrition with pumice powder or the knife eraser will be found most efficient. For the complete removal of small bodies the best method is complete bleaching with Farmer's bleach, applied strong by means of a fine pointed sable hair brush; wash and remove the white silver with hypo. Here also if an error has been made it can be rectified by careful local redevelopment.

To lighten areas of the print the paper-back of the negative may be darkened with a solution of permanganate of potassium of sufficient strength, allowing it to change from red to brown. If over done it is removable by a wash with metabisulphite of potassium. Many will prefer the stump and crayon sauce.

Developers For Papers

Don Carlos Hines, M. D.

ALL of us have been at times confused by the multiplicity of developers recommended for different developing-out papers. And perhaps we have wished for one supreme developer which would be all things to all papers, yet need be made up only once a year.

The author's approximation to the above ideal has now been in use in his darkroom for almost two years, and it has proven so simple and satisfactory a system that he is impelled to make it known to others. Its particular advantages are that it saves time, lessens waste of chemicals, makes for less deterioration of stored solutions, and is capable of duplicating practically any formula.

The basic idea is far from new and will be recognized by all readers, but nowhere has the author seen it worked out in anything like complete fashion. The foundation is a set of concentrated stock solutions which are simple to make up, susceptible of long storage, and easy to mix. The developing agents included are metol, hydroquinone, and amidol. The reader can adapt others to the same scheme.

The composition of the stock solutions, five in number, is given in Table I. They are adapted from a set credited to Snodgrass and are as concentrated as is practicable. Five solutions may seem offhand to be a good many; but when one realizes that it is always necessary to have at hand a solution of bromide, and that any developer keeps much better if the carbonate is separate from the developing agent, one sees that only two "extra" solutions are required. And how many bottles of miscellaneous developer they do away with!

For metol-hydroquinone developers, Table II gives the amounts of the stock solutions in parts per thousand (cubic centimeters per liter) required to make up developer ready to use. The quantities of bromide (stock solution D) given are the minimum recommended. More may always be added.

For amidol developers, Table III gives similar data. Since amidol does not keep in solution, it must be weighed dry and dissolved at the

time of use. The author weighs the appropriate amounts into half-ounce pill vials with screw caps (obtainable at any drugstore) in batches of a dozen or so at a sitting, so that on making up the developer for use, he merely dumps in the contents of a vial.

Two graduated cylinders are needed, one of 100 cc (4 ounces) and one of 500 or 1000 cc (16 or 32 ounces) capacity. The stock solutions are measured out into the small graduate and poured into the larger one, which is then made up to the required volume with water. For example, if one wished to make up a liter of D73, he would measure into the small graduate 75 cc of stock solution A, pour this into the 1000 cc graduate, measure out 108 cc of stock solution B by means of the small graduate and add this to the larger one, and similarly add 250 cc of C and 27 cc of D to the large graduate. Then water would be added to the solutions already in the large graduate until the liter or 1000 cc mark should be reached. Pouring the contents of the graduate into the developing pan will serve to mix it thoroughly enough.

The author habitually uses 300 cc (10 ounces) of developer in his tray for contact prints and 600 cc (20 ounces) for 8x10 enlargements. To facilitate mixing, he has tacked up over his work table a card giving the volumes of stock solutions which make up the desired amount of developer. These volumes are obtained from those given in Tables II and III by multiplying by 0.3 or 0.6, depending on the volume desired. For instance, to make up 600cc of D72 for bromide paper, one would take 0.6x50 cc or 30 cc of stock solution A, 0.6x74 cc or 44 cc (the fraction may be disregarded) of B, 0.6x135 cc or 81 cc of C, and 0.6x38 cc or 23 cc of D.

For conversion to apothecaries' fluid measure, it will be noted that parts per thousand divided by 100 gives fluidounces per 10 fluidounces, and that any fraction of a fluidounce may be multiplied by 8 to give drams, and any fraction of a dram by 60 to obtain minims.

Thus, to make up 10 ounces of D72 for bromide paper, one would take 1/100 of 50 or $\frac{1}{2}$ ounce of stock solution A, 1/100 of 74 or $\frac{3}{4}$ ounce of B, 1/100 of 135 or 1.35 ounces of C, and 1/100 of 38 or 0.38 ounces of D. To simplify the amounts of C and D, we can multiply the extra 0.35 ounce of C by 8 to get 2.8 drams, and the extra 0.8 dram by 60 to get 48 minims, making the amount of C 1 ounce, 2 drams, and 48 minims. Similarly, with D, one multiplies 0.38 by 8 to get 3.04 drams, the 0.04 drams by 60 to get 2.4 minims, or a total of 3 drams, 2 minims. Except for dyed-in-the-wool old-timers, I strongly recommend the metric system. It takes very little time to master and is much simpler, once mastered.

The disadvantage of stock solutions is their liability to deterioration. This liability is minimized by tight corking in small bottles which are kept cool and in darkness. The author keeps his stock solutions in 4-ounce bottles whose corks have been dipped, after insertion into melted paraffin to prevent diffusion of oxygen. A set of such solutions which had been in routine use in the author's darkroom for 6 months was tested in the following manner. The carbonate was compared with a fresh solution. The latter was perfectly clear; the former had an eighth-inch layer of gelatinous precipitate at the bottom of the bottle. Comparative titration with hydrochloric acid, using methyl red as an indicator, showed differences not outside the limits of error of the method. Determination of



"Messidoro"

Mario Vittone

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the carbon dioxide content with the Van Slyke apparatus revealed that the fresh solution contained about 1.5% of sodium bicarbonate against about 6% for the old. These changes represent an insignificant loss of potency.

D72 for gaslight paper and D72 for bromide paper were made up from the old stock solutions and were placed alongside D72 freshly made up from the dry chemicals. The fresh solutions were of course water-white; the old had a barely noticeable brownish tint. Duplicate exposures were run through, all times and temperatures being the same, the only variables being the developing solutions. The prints, both contact and enlarged, from the fresh developer were a shade the darker when first put into the fixing bath, but after washing and drying they were indistinguishable from those run through the old developer. These results the author considers particularly satisfactory in view of the fact that the temperature in the darkroom where the solutions were kept never dropped below 65° F. and was usually 70 to 72, and that the bottles had been opened and partly used, some a week or two previously, in the course of routine work. Solutions kept at a lower temperature and freshly opened would have shown even less change. The author recommends, however, that not more than 3 or 4 months' supply be made up at one time.

A great source of confusion regarding developers is the difficulty in direct comparison of formulas occasioned by the use of the *avoirdupois*

system and the employment of stock solutions of different degrees of concentration. An example will suffice:

	I	II
Metol	45 grains	19 grains
Sodium Sulphite (dry)	1½ ounces	274 grains
Hydroquinone	175 grains	73 grains
Sodium Carbonate (dry)	2¼ ounces	410 grains
Potassium Bromide	27 grains	11 grains
Water	to make 32 ounces	40 ounces

Both formula I and formula II represent the well-known D72, I in stock solution, II ready to use, but who would recognize them? To afford direct comparison, formulas have been reduced to parts per thousand (grams chemical per liter of solution) of developer ready for use. These values for the more common formulas are given in Tables IV and V.

For the sake of those who will wish to reduce new formulas as encountered to common terms, the following conversion table is given:

1 gr. per 8 oz. (liq.)	= 0.274 gm. per liter
1 gr. per 16 oz. (liq.)	= 0.137 gm. per liter
1 gr. per 20 oz. (liq.)	= 0.110 gm. per liter
1 gr. per 32 oz. (liq.)	= 0.0684 gm. per liter
1 gr. per 40 oz. (liq.)	= 0.0548 gm. per liter
1 gr. per gallon (liq.)	= 0.01714 gm. per liter
1 oz. (solid) per 8 oz. (liq.)	= 120.0 gm. per liter
1 oz. (solid) per 16 oz. (liq.)	= 60.0 gm. per liter
1 oz. (solid) per 20 oz. (liq.)	= 48.0 gm. per liter
1 oz. (solid) per 32 oz. (liq.)	= 30.0 gm. per liter
1 oz. (solid) per 40 oz. (liq.)	= 24.0 gm. per liter
1 oz. (solid) per gallon (liq.)	= 7.50 gm. per liter

The distinction between solid and liquid ounces is necessary because, while one liter of water weighs 1000 grams, a solid ounce Avoirdupois weighs 28.35 gm. and a liquid ounce contains 29.6 one-thousandths of a liter, a discrepancy of more than 4%. The use of the conversion table is best shown by an example. Suppose we have 45 grains of metol in 32 ounces of stock developer which is diluted 1 to 2 for use. Since after dilution the volume will be 1 *plus* 2 or 3 times what it was before, we will have 45 grains of metol in 96 ounces of developer-ready-to-use, or 15 grains in 32 ounces (dividing both by 3). The factor for grains per 32 ounces of finished developer is, from the table, 0.0684 gm. per liter. Multiplying 15 by 0.0684, we get 1.026, or about 1.03 gm. per liter as the amount of metol in the formula as ready to use.

The formulas and manipulation listed below are those advised by the manufacturer of the paper in question. The standard temperature is 70° F., and the developing time is the minimum except as noted.

Eastman Azo: D72 gaslight, 45 seconds; for colder tones D73, 45 seconds; for portrait prints D52, 90 seconds.

Velox: D72 gaslight, increasing quantities of stock solutions by one-half, 45 seconds.

P. M. C. bromide: D72, 90 seconds.

Vitava Athena: D52 or D64, 90 seconds.

Vitava Opal: D64, 90 seconds.

Vitava Projection: D52, 90 seconds.

Eastman Portrait Bromide and Translite: D52, doubling the quantities of stock solutions, 90 seconds.

Defender Apex: D72 gaslight, 45 seconds; for colder tone D73, 45 seconds; for portrait prints Universal Standard Normal with 1 to 2 grams potassium bromide (100 to 200 cc stock solution D) per liter recommended, 90 seconds.

Artura Iris: D52.

Velour Black: Universal Standard Normal with 1 to 4 grams potassium bromide (100 to 400 cc stock solution D) per liter recommended, 90 seconds. The Soft and Hard formulas are found by the author to work well.

Veltura: D52, 90 seconds.

Agfa Noko: cold blue-black tones, N103, 60 seconds.

medium cold tones, N102, 60 seconds.

medium warm black tones, N96, 60 seconds.

olive black, N86, 60 seconds.

portrait prints, W5, 90 to 120 seconds.

Indiatone: W2, 90 to 120 seconds.

Brovira: B5, 90 seconds; for brown-black tones increase exposure 3 to 4 times, develop in B10 for 5 to 7 minutes.

Haloid paper (all): Universal Standard Normal 0.44 gram potassium bromide (44 cc stock solution D) per liter, 90 seconds at 65°.

Dassonville Charcoal Black: Dassonville, 120 seconds.

For most papers the Wellington amidol formula will be found satisfactory. It is recommended to be used at 60 to 65°. The maximum amounts of amidol will give a rich coal black, the minimum amounts a chocolate black. Increase of bromide increases contrast. Increase of sulphite softens contrast. Addition of sodium carbonate increases contrast and alters tone.

In conclusion, a few words on the compounding of the stock solutions may not be amiss. The author uses large enamel saucepans (20 cents at Woolworth's) for mixing stock solutions. They can be heated directly over a flame, and the contained mixture can be agitated without the use of a stirring rod.

Stock solution E will be found of great service in making up A and B. To make up a liter of A, 12.5gm. of metol are added to 500 cc or a little less of hot (125° F) water and dissolved with gentle agitation. Then 450 cc of stock solution E (containing the required 90 gm. of sulphite) are added and the volume made up to 1000 cc. The solution should be mixed thoroughly before pouring into the small bottles for storage.

For solution B, 300 cc of E are added to 600 cc of hot (150° F) water, to which is added 33.3 gm. of hydroquinone. After solution, the volume is made up to 1000 cc, and the whole mixed thoroughly. The author does not filter his solutions. Any solid residue (the only kind filtering will remove) settles to the bottom of the stock bottles and need not be poured out if the bottles are not unduly shaken.

TABLE I
Composition of stock solutions. The carbonate and sulphite are anhydrous

STOCK SOLUTION A			
Metol	12.5 grams		183 grains
Sodium Sulphite	90.0 grams		3 ounces
Water	to make 1.0 liter		32 ounces
STOCK SOLUTION B			
Sodium Sulphite	60.0 grams	2 ounces	
Hydoquinone	33.3 grams	1 ounce 50 grains	
Water	to make 1.0 liter	32 ounces	
STOCK SOLUTION C			
Sodium Carbonate	100.0 grams	3 ounces 148 grains	
Water	to make 1.0 liter	32 ounces	
STOCK SOLUTION D			
Potassium Bromide	10.0 grams	146 grains	
Water	to make 1.0 liter	32 ounces	
STOCK SOLUTION E			
Sodium Sulphite	200.0 grams	6 ounces 292 grains	
Water	to make 1.0 liter	32 ounces	

TABLE II
Metol-hydroquinone developers: amounts of stock solutions required, in parts per thousand (cc per liter).

	D72 gas- ligh	D72 bro- mide	D73	Universal SOFT	NORM.	Standard HARD	SOFT	D64 NORM.	HARD
A	83	50	75	100	67	33	141	71	71
B	122	74	108	50	100	150	59	138	245
C	225	135	250	60	120	180	101	101	152
D	63	38	27	---	---	---	130	130	175
E	0	0	0	0	0	0	0	0	0
	D52	Das- son- ville	B5	W2	N103	N102	N96	N86	W5
A	60	123	50	60	92	76	56	56	64
B	95	169	70	93	113	105	98	105	99
C	75	150	110	119	224	160	113	85	102
D	80	212	39	73	40	35	135	240	140
E	0	0	0	0	25	9	6	0	0
	B10								
A	0								
B	113								
C	106								
D	46								
E	14								



"Illustration for Bullock's Wilshire"

Charles E. Kerlee

19th Los Angeles International Salon

TABLE III

Amidol developers: amounts of stock solutions required, in parts per thousand (cc per liter). Amidol is given in gm. (solid) per liter. Development is for 2 minutes.

	Wellington	Agfa AM-3	Dassonville	Easman D51
D	44 to 110	55	50	30
E	178	219	80	108
Amidol	5.5 to 8.8	6.6	5.3	7.0

TABLE IV

Metol-hydroquinone developers: composition in parts per thousand (gm. per liter). Sulphite and carbonate are anhydrous.

	D72 gas- light	D72 bro- mide	D73	Universal SOFT	NORM.	Standard HARD	SOFT	D64 NORM.	HARD
Metol	1.03	0.62	0.93	1.25	0.83	0.42	1.76	0.88	0.88
Sod. Sulphite	15.0	9.0	13.3	12.0	12.0	12.0	12.7	12.7	19.0
Hydroquinone	4.07	2.45	3.60	1.67	3.33	5.00	1.95	4.58	8.18
Sod. Carbonate	22.5	13.5	25.0	6.0	12.0	18.0	10.1	10.1	15.2
Potas. Bromide	0.63	0.38	0.27	1.30	1.30	1.75
	D52	Das- son- ville	B5	W2	N103	N102	N96	N86	W5
Metol	0.75	1.54	0.62	0.75	1.15	0.95	0.70	0.70	0.80
Sod. Sulphite	11.3	22.5	8.6	10.3	18.9	15.0	12.0	11.5	12.0
Hydroquinone	3.15	5.64	2.34	3.08	3.75	3.50	3.25	3.50	3.30
Sod. Carbonate	7.5	15.0	11.0	11.9	22.4	16.0	11.3	8.5	10.2
Potas. Bromide	0.80	2.12	0.39	0.73	0.40	0.35	1.35	2.40	1.40
	B10								
Metol	0								
Sod. Sulphite	9.5								
Hydroquinone	3.75								
Sod. Carbonate	10.6								
Potas. Bromide	0.46								

TABLE V

Amidol developers: composition in parts per thousand (gm. per liter). Sulphite is anhydrous.

	Wellington	Agfa AM-3	Dassonville	D51 Eastman
Potas. Bromide	0.44 to 1.10	0.55	0.50	0.30
Sod. Sulphite	35.6	43.8	16.0	21.5
Amidol	5.5 to 8.8	6.6	5.3	7.0

Quid Pro Quo

V. E. Johnson

TO EVERY one afflicted with photography, come sooner or later the desire to join a camera club; first perhaps, because of a desire to associate with others who are enjoying the same malady, and second because of an entirely human desire to show and be shown.

A period of shopping around to find a congenial club with suitable facilities, membership, location and reputation is followed by an earnest consideration of the two-headed question: "Can I afford it—and if I can will I get my money's worth?" "Getting at least what we pay for" is a national slogan—or at any rate we like to think that it is.

Now there are camera clubs and camera clubs, but I have yet to see one that sells memberships on a "Quid Pro Quo"—"so much for so much" basis. Their value can not be measured by chemicals, equipment or club quarters.

No one believes that the \$50.00 he pays for the first year's membership is a good financial investment, although at that it compares not so unfavorably with a vast number of Gilt Edged 1929 Model Bonds. Take \$50.00 and capitalize it on a 5% basis and immediately it represents the income from \$1000, assuming of course that any photographer ever had that much money all at one time.

Now \$1000 will buy a lot of photographic equipment, a truck load of hypo, a second hand Ford, and still leave enough money to get married on if that is unavoidable. And so it goes without further saying that any one who attempts to evaluate a camera club membership on no other basis than that of sound Wall Street economics, will get for his pains only a well deserved headache.

A camera club exists only because of a mutual attraction between people who have a common interest in photography. It is true that the facilities are a valuable asset, and that now and then a member joins for no other reason but that of having a place to work, but by and large the material reasons are of minor importance. After all, a closet can be made into a dark room, and a tin box into an enlarger.

Such a club is a purely co-operative enterprise, share and share alike in privileges, expenses and responsibilities. The fact that there are By-Laws

and House Rules indicates merely that there must be some sense of order, some way of keeping peace in the family, and rent money in the strong box. It is not a commercial undertaking, a going business where one lays his money on the line and loudly demands "Give me." The club is not obligated to give its members anything—they are the club and they can take out only what they put in. It does not even owe the members an education in photography unless they choose to undertake that activity. Because obviously the club is not a separate entity in itself, nor yet some sort of a benign disembodied Santa Claus that hovers over the Club Room chimney pots eager to do something for somebody.

If then, the material advantages that accrue from memberships are of minor importance, and if joining a club not only confers privileges but also imposes responsibilities, what is it that has caused Photographic Societies to be formed in ever increasing numbers until almost every hamlet in the whole civilized world has at least one? And in the face of the obviously poor economics involved why are photographers, amateur and professional, not only willing but eager to pay cold cash for memberships?

Perhaps the simplest answers are the fundamental truisms that "birds of a feather like to flock together," that "united we stand but divided we fall," and that we have found from long years of individual efforts that as members of organizations we can do for ourselves things that we could not possibly accomplish alone.

The universal appeal of photography attracts to it men and women from all walks of life, lawyers, doctors, artists, people who have been places, who have seen and done things. The club provides social contacts with these interesting fellow beings, and engenders friendships that are pearls beyond price.

Of the practical benefits (I did not as you will note say "economic") to be derived comes first of all the educational program that is universally a part of camera club activities. It provides a place where he who knows can teach, and he who knows not can learn, a forum open for the discussion of all the isms and ologies that always follow close on the heels of the artistic. It becomes a clearing house for all that is new, a fountain head of the latest photographic knowledge. The reading tables are always vital with the latest magazines, catalogues, bulletins and announcements.

In addition to the annual or semi-annual "schools" that have become established as a regular feature, are the weekly lectures and demonstrations by experts in the various technical and artistic phases of photography. Men are brought in from various fields to instruct members in taking, developing, retouching and displaying pictures—men who neither could nor would impart that same instruction to individual members, one at a time.

Every club has as a part of its regular programs a print criticism night, conducted by the more advanced workers. Outside of a camera club it would be impossible for any except a very limited number to become acquainted with, much less get the criticism and advice of, such experts in art and technique.

The rugged individualist who develops his technique in the dank solitude of a basement darkroom, may through sheer perseverance and innate artistry produce fine pictures, but to say the least he starts off with



Fig. 1

when we purchase the Filter for Photoflood. The light from the Photofloods can be diffused by a screen of tracing cloth or ground glass, but as stated above any diffusers over the light source are not recommended for color photography. There is another way of getting an even distribution of light even though the sources themselves are concentrated, and that is by the use of many sources. This has many advantages and no objections for Kodachrome filming, for many sources will give a high intensity of light which we need. The bulbs themselves and the reflectors for them are inexpensive too.

Now with the above preliminary it should not be too great a shock to state this fact: *For Kodachrome shooting indoors, unless one intends to make nothing but close-ups, he should provide himself with at least ten Photoflood lamps in reflectors. Twelve or even fifteen will not be out of place.*

Placement of Lights

The placement of lights for Kodachrome photography is quite different from that for the best black and white technique. The units for color lighting are placed on either side of the camera, most of them a little higher than the heads of the the subjects. There should be, however, some lights lower down about waist high to illuminate shadows. It is also desirable that there be a little more light coming from one side of the camera than from the other, but this difference must not be very great.

Because the placement of ten or more lighting units presents quite a problem if it is to be accomplished without a hopeless tangle of cords and tripod stands, we wish to again point out the use of the "clamp on" reflectors with a "light bridge" as described in the October 1935 issue of this magazine. This system of lighting is shown in the accompanying photograph. (Fig. 1) Here you see twelve units on a set with very little confusion of

cords. This lighting system is exceedingly flexible, for any unit may be clamped anywhere on the three cross bars or on the uprights and directed by means of the ball and socket joint to any portion of the subject. If filming operations are to be shifted to another part of the set, three people, each lifting one of the uprights, can move the whole set-up without dismantling. It is desirable to have a few of the regular tripod stands for lighting units to be used as front lighting on a lower level as shown in the illustration.

Special attention in color filming must be given to the background. Unless the background is of quite a light color it will be necessary to direct special lighting on it so that it will not appear too dark. Fig. 2 is a side view of a typical shot of a person about five feet from a wall; a group of lighting units at A. are directed upon the subject. Now if no other lighting is used, the light will go five feet before reaching the subject and ten feet before reaching the background. Since light intensity varies inversely with the square of the distance the background being twice as far away, will receive only one quarter as much light. This would not be so serious in black and white photography, for the latitude of the film is very wide, but with Kodachrome film the background would be almost black. The remedy is to have other lighting units at a point B. directed on the background from a distance similar to that between the subject and the main units.

Ordinary backlighting is not very successful with Kodachrome film, especially if the light strikes the face. The addition of a bright accent light to a face already lighted to the proper level will cause the flesh tones to be "washed" out. A colored back light or side accent light, however, can often be used to give a very pleasant effect. This can be done with a powerful spot light over which a piece of colored gelatin has been placed. A red or yellow glow from a low point at one side when lighting a portrait is an effect used very often by magazine illustrators in their color plates. One type of white backlighting is nice with color film and that is a rim lighting produced by a single Photoflood in a reflector placed low behind the person being photographed and directed up to the head.

The main objective in placing lights for color exposures is to distribute the light so that there are no strong shadows. It is therefore much easier to do really good lighting for color work than for black and white, for it is not necessary to know all the infinite ways of handling light and shade. What color wants is mostly light and little shade.

Exposure for Kodachrome Interiors

The proper exposure to use for Kodachrome interiors can be determined in one of two ways; by means of a table and measurement of distances from the lamps to the subject, and by means of an exposure meter. There are only two types of exposure meters that are suitable, however: the photo-electric and the photometer. Any of the others, which depend upon the eye as a constant to observe a disappearing number will give very erroneous readings with artificial light.

When using the photo-electric meters, the readings must be taken close to the object being photographed, preferably within ten inches. Care also must be used so that the meter held so close to the subject does not cast shadows. When using the Weston universal meter, the speed of the film should be set at 2. With the Cinemeter and others which do not have a sim-

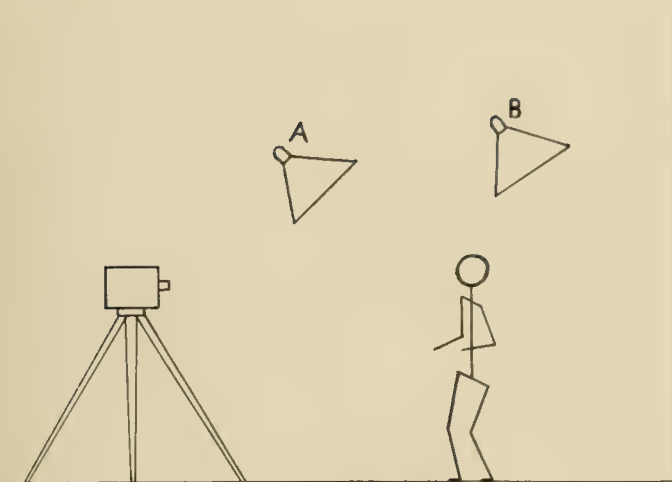


Fig. 2

ple means of setting the scale for different film speeds, the reading may be taken to determine the proper exposure for regular panchromatic film in Mazda light and then the lens diaphragm opened two stops.

An alternate method of determining exposure with the Weston universal meter has been found successful. This entails holding a 2x3 ft. piece of white blotting paper in place of the subject. The blotting paper must be held so that it is perpendicular to the line from the camera, in other words facing the camera squarely. A reading is then taken holding the meter about two feet from the surface of the paper. To the light value thus obtained is set the point marked "O" or "Brighter Objects will be Overexposed." With the film speed indicator at 2 the exposure may then be read. *Caution:* The point mark "O" etc. on the Weston meter can be used in this way to determine the light intensity and exposure setting for Kodachrome, but should *not* be used as an indication of the film scale or latitude. The exposure indication obtained in the above manner is for a scene with medium colors. The white blotting paper used in determining the exposure would actually be out of the film range for that exposure setting.

For those who do not use a meter, the following table is printed because it includes the indications for more lamps than the usual exposure table.

Kodachrome Exposure Table

Number of Photoflood lamps in reflectors and distance of lamps from subject—
Camera speed normal (16)

f. 1.9	f. 2.7	f. 3.5
2 at 3½ ft.	2 at 2¼ ft.	3 at 2 ft.
3 at 4¼ ft.	3 at 3 ft.	4 at 2¼ ft.
4 at 5 ft.	4 at 3½ ft.	6 at 3 ft.
6 at 6 ft.	6 at 4¼ ft.	8 at 3½ ft.
8 at 7 ft.	8 at 5 ft.	10 at 4 ft.
10 at 8 ft.	10 at 5½ ft.	12 at 4¾ ft.
12 at 9½ ft.	12 at 6¾ ft.	

Note: The above table is for exposures when *all* the lamps are superim-

posed on the same area. In most cases when more than 6 lamps are used, they do not all flood the same area but some are used to illuminate background, others for the main subject, etc. For example there may be 12 lamps on the set but placed so that 3 are flooding the background at $4\frac{1}{4}$ ft. distance, 4 are on the right side at 5 ft. distance, and 5 on the left side about $5\frac{1}{4}$ fet. away. The exposure would be f. 1.9 as shown by the table.

A couple of miscellaneous points about interior Kodachrome filming should be mentioned: If lipstick and rouge are used on any of the subjects to be photographed, be sure that it is a light shade, tending to orange. Some of the darker shades of lipstick photograph with a purple tint which is most undesirable. Also be sure not to put more than four Photoflood lamps on one circuit of the ordinary house wiring. If more lamps are fed from a single line there is apt to be a voltage drop which will change the color of the light enough to give poor color rendering as well as throw exposure calculations off.

Questions and Answers

QUESTION: In exposing a Kodachrome scene which consists mostly of sky, should the meter reading be taken of the sky alone?

ANSWER: No. The meter reading should be taken in the ordinary manner on foreground objects excluding sky and the lens diaphragm set accordingly. If the reading is taken of the sky alone the resultant exposure will show a very deep blue with all objects on the ground in silhouette. In some cases, of course, such an effect may be desired.

QUESTION: What is the shutter speed of the Simplex Pockette?

ANSWER: The Simplex when running at normal speed (16) gives a $1/40$ second exposure. Other well known cameras and their shutter speeds:

Eastman	$1/30$	
B & H Filmo	$1/25$	(70, 70D)
B & H Filmo	$1/50$	(75)
B & H Filmo	$1/30$	(121)
Victor	$1/30$	

Many people do not pay attention to the shutter speed of their particular camera. This is important, for in some cases there is a whole stop difference in lens setting required. For instance, if the correct exposure for a scene made with a Filmo 70 is f 8, the same scene taken with a Filmo 75 would require f 5.6.



"Still Life"

Hiromu Kira

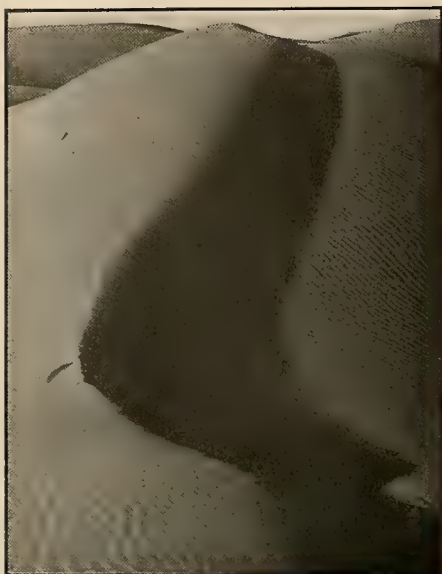
Advanced Medal Print

■ This picture may well serve as an example of what one should look for, as well as what one has a right to expect in a finely executed still life. Namely, beauty of form, a perfectly adjusted composition, and superb technique. Of course we must find these elements in all worthwhile pictures, but we should find them in their highest form in still life because of the fact that in this field the photographer has complete control over all the factors involved in the production of the picture. Further, he has the opportunity to repeatedly re-photograph the same subject if his first attempt is not wholly successful. In many other fields we must face the fact that something short of perfection is the best that can be achieved with the materials at our command. An action shot, for instance, may be lacking in depth of focus. While deploring this short-coming we realize that the relation of exposure and lens aperture were dictated by the subject matter, not by the photographer and consequently we accept the picture as a fine photograph. For the reason given above no such allowance should be made in the field of still life.

Mr. Kira offers us a splendid example of what can be done. His composition is beautifully simplified, arranged with great subtlety, and superbly photographed.

Data: 4x5" Graflex; 7" Carl Zeiss; 1 sec. at F:22 with 2xfilter, on E. K. S. S. Pan., in D-1; 1000 W Mazda and daylight; Defender Velour Black D in D-72; Gold and Platinum toned. 11x14" prints on 16x20" mounts may be obtained at the price of \$6.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Second Award
Advanced Class



"Wind Blown"

R. Owen Shrader

works he progressively develops within understanding. We can not merely decide to photograph simpler forms and straight-way go out and do so. We must first learn by a gradual process to see and feel such forms. Until we do we are artistically blind.

(Continued on Page 91)

Third Award
Advanced Class

■ Mr. Blew has worked out a nice composition based upon the opposition of the diagonal lines formed by the wave and the boat. There will be some who object to the fact that the figure is placed exactly in the center of the print with respect to left and right. We feel that it would be better if the figure were further to the right in the picture space not so much because we object strongly to its present position as such but because if it were moved it would reduce the size of the uninteresting area in the upper right



"Beaching The Dory"

E. W. Blew, A.R.P.S.

that is rather a weak part of the picture as now constituted. Provided that there is enough of the negative not included in the print as seen, this could be accomplished by turning the negative out of the horizontal during projection.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex; E. K. Panatomic in DK-50; E.K. P.M.C. No. 11 in D-72. 8x10" prints on 14x18" mounts may be obtained at the price of \$7.50 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Fourth Award
Advanced Class

■ Mr. Williams has found unusually interesting material for this fine still life, for the combination of the brilliant crockery with the dark tones of the peppers is most intriguing. This picture offers a fine opportunity for a short discussion of Balance in composition. By which is meant the weight or strength of one item in a picture in relation to the whole. We can see from this picture that if an item is to achieve balance in a composition it must have not only the proper size and position but the proper depth of tone and contrast with its surroundings as well.

We believe that most will agree that this picture appears to have a slightly weak area in the lower right, which makes one feel that they might like to trim the right or introduce some small object there. We should not overlook the fact that in planning his composition Mr. Williams appreciated the necessity of filling this space, and that he obviously intended that the shadow at the extreme right should perform that function. Unfortunately because of the tremendous strength of the dark toned peppers and the high key of the shadow it is not strong enough to bring the whole into full balance and consequently we notice the weakness in the lower right mentioned above. To render the shadows dark would require a degree of contrast that would probably spoil the softness of the high key effect that is so

(Continued on Page 91)



"Peppers"

M. Bradley Williams



"Some Fun"

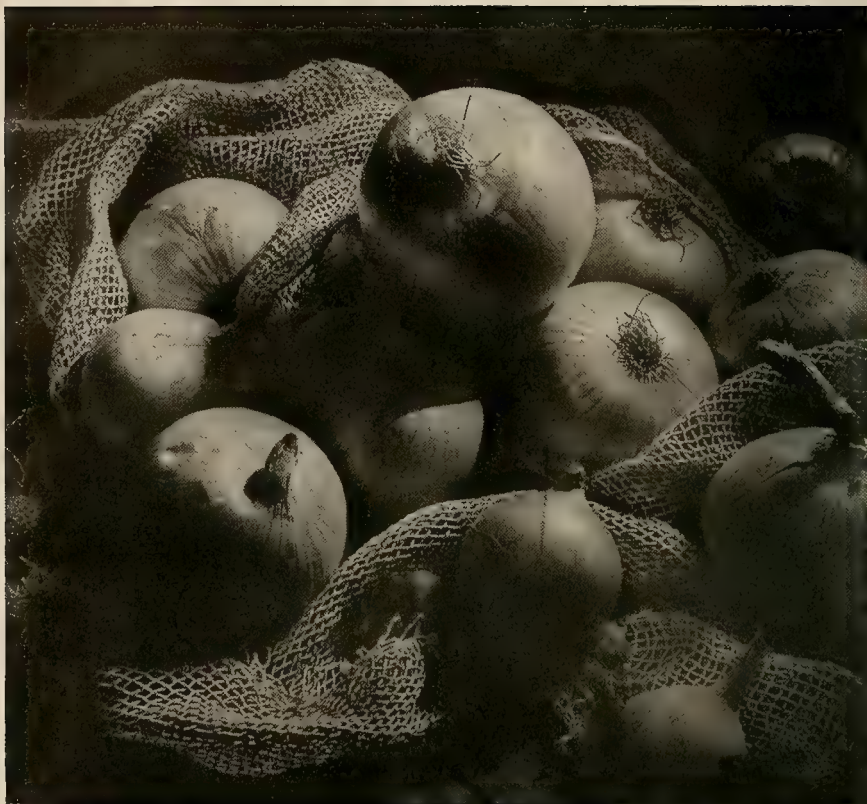
John Muller

Fifth Award
Advanced Class

■ In several respects this picture is superior to others that have been placed above it. Certainly it has the most interesting subject matter. The arrangement of the head in the picture space leaves nothing to be desired while the low camera angle seems highly appropriate. It was given fifth position primarily on technical grounds which may or may not be justified, depending on your point of view. It was felt that the definition, not exceptionally good at any point, fell off much too rapidly, with the result that important parts of the picture are quite fuzzy. In making their decision the judges did not fail to appreciate that Mr. Muller purposely, and quite rightly, focused on the mouth because the laugh is the thing to emphasize. They simply wanted greater depth of focus.

Data: 4x5" Graflex; 7" Zeiss Tessar; 1/50th sec. at F:11, on Defender X F Pan., in D-61A; Velour Black J in D-72. 11x14"

prints on 14x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Spanish Onions"

Ralph Rex

Amateur Medal Print

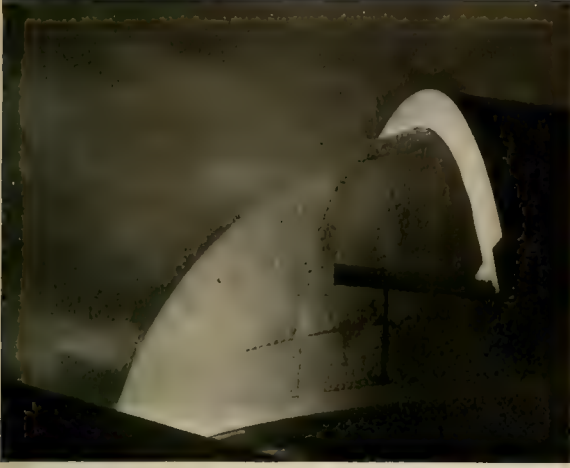
■ This is the second first award that Mr. Rex has won in these competitions, consequently he receives a deserved promotion to the Advanced Class.

Despite the fact that we must agree that mere technical excellence does not make a picture, we nevertheless experience a thrill of pleasure in viewing such a fine clean cut piece of photography as this. It goes to show that good technique, while not an end in itself, is and should be a major factor in the success of a picture. Even those judges who decry what they consider a present day tendency to over-emphasize technique, cannot bring themselves to over-look technical short-comings in a picture. The number of prints which fail to win prizes in these competitions, or fail of acceptance in salons because of technical deficiencies are legion, and consequently we, for one, feel that the present day emphasis on technique is an entirely beneficial influence, and one which should be continued and strengthened.

Aside from technical perfection Mr. Rex has also achieved an interesting arrangement, and we consider this picture a fine piece of work.

Data: $2\frac{1}{4} \times 2\frac{1}{4}$ " Rolleiflex; F:3.8 Zeiss Tessar; 20 secs. at F:22 by daylight and one 500 W. T-20 bulb; Agfa Plenachrome, in Glycin; E. K. Vitava W in M. Q. 8×10 " prints on 14×18 " mounts, and 10×12 " prints on 16×20 " mounts may be obtained at the prices of \$6.00 and \$8.00 respectively on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.

Second Award
Amateur Class



"Ricard Observatory"

John G. Shortridge

■ Mr. Shortridge offers us a picture that is proof of the fact that the discerning eye can find pictures in material that most of us would pass by. In working out compositions of this kind the viewpoint is all important and must be chosen with great care. Observe, for example, the necessity of including the part of the building that breaks the line of the dome in the lower left. Without this the composition would be unsupported in the lower left, and the whole thing would appear to be in danger of toppling over. It

will be evident to all that the dark line which runs horizontally and cuts into the dome from the right is not properly a part of the composition. The picture would be complete without it. Unfortunately there is no way in which this could be eliminated so we must make the best of it.

Data: Leica D; 50 mm. Elmar; E. K. Background film in DK-76, exposure unknown; Agfa Brovira Antique soft, in Amidol. Negative reversed as respects right and left in making print. 8x10" prints on 14x18" mounts may be obtained at the price of \$2.50 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Third Award
Amateur Class

■ Mr. McCutchan offers an excellent portrait of a strong and interesting face, nicely photographed and well posed. The low camera angle and the high placement of the head are well chosen for they convey the suggestion that the Life Guard is gazing far and wide in keeping a watchful eye on his charges. We see only one short-coming in the print and this is the result of technical manipulation. By looking closely at the picture in the lower right, just to the right of the forearm, you will see the suggestion of a building in the background. Obviously there is a large building in the background in the original negative. Mr. McCutchan was right in feeling that this should be removed but has not been quite successful in carrying out that removal. His method was to dodge out the area to the right of the figure where the building appeared during projection, but he did not carry the dodging down far enough on the right with the result that some of the building still shows. When dodging of this kind is resorted to it obviously leaves the dodged area white in the print. Thus we notice a very light area that runs from the head to the right edge of the print. Such light areas can be readily dodged in by removing the negative from the carrier, protecting the area



"Capt. Roy Miller"

Earle McCutchan

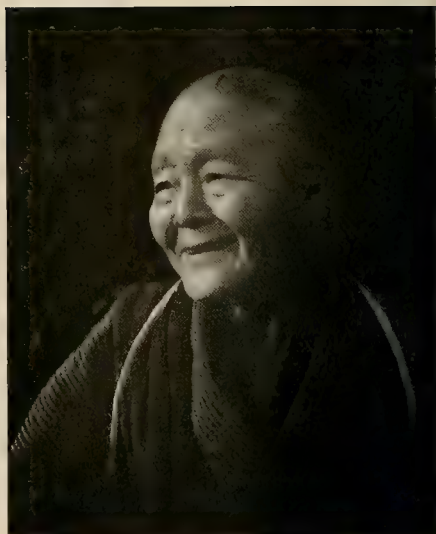
(Continued on Page 91)

**Fourth Award
Amateur Class**

■ Mr. Ahrens sends this interesting subject all the way from Japan. He has caught a most revealing expression that shows much of the character of his interesting model. The most interesting point for discussion concerns the tone value of the background in relation to the rest of the picture as a whole. Admittedly the dark background does present the head in fine relief on the side that is strongly lighted, but we would like to see a bit more contrast between head and background on the shadow side. Further we should notice that the dark background in combination with the large expanse of dark clothing combine to give a very large area of dark tone to the picture. This tends to give the picture a heaviness, a somber quality that is not entirely in keeping with the cheerful, although rather wistful expression that has been caught so nicely.

Consequently we believe the picture would be somewhat more effective if the background had been rendered in a medium tone of grey.

Data: Leica 5 cm. Elmar, f3.5, 1/40 sec. at 7:00 A. M. Panatomic in D-76, Bylei No. 12 normal in D-72.



"Benevolence"

Paul D. Ahrens



"Freda and Ugo"

George Forrester

**Fifth Award
Amateur Class**

■ The arrangement of two figures is always a difficult problem in composition, and Mr. Forrester shows us with this picture one way in which that problem can be solved rather effectively. The male figure because of greater size, higher key in the clothing, and higher position of the head definitely dominates. The low camera angle and the informal pose combine to give the picture a pleasing unconventionality, even though such treatment is no longer at all unusual.

The clouds are rather spotty and unrelated to the structural lines of the composition, and consequently the picture would be better without them.

Data: Zeiss Contax; 50 mm. F:2.8 Zeiss Tessar; 1/50th sec. at F:8 in bright sunlight with light yellow filter; E. K. Panatomic in DK-76; E. K. P.M.C. No. 7, in D-72. 11x14" prints on 16x20" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Monthly Competition

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: R. Owen Shrader, for the Pack Rats; John Muller, for the Pictorial Photographers of America; and E. W. Blew, for the Whittier Camera Club.

The following won points for their clubs in the Amateur Class: Earle McCutchan, for the Camera Club of Long Beach; John G. Shortridge and George Forrester for the Golden Gate Miniature Camera Club.

Contributing Clubs

Amherst Camera Club (Mass.)	Montreal Camera Club
Calgary "Y" Camera Club (Canada)	Orange County Camera Club (Huntington Beach, Calif.)
California Camera Club (San Francisco)	Pack Rats (Pasadena, Calif.)
Camera Art Group (Bombay, India)	Peoria Photo Forum (Ill.)
Camera Club of Long Beach (Calif.)	Photographic Guild of Philadelphia
East Bay Camera Club (Oakland, Calif.)	Photographic Society of San Francisco
El Paso Camera Club (Texas)	Pictorial Photographers of America
Fort Dearborn Camera Club	Pictorial Photographers of Victoria (Canada)
Golden Gate Miniature Camera Club (San Francisco)	Schenectady Photographic Society
Japanese Camera Club (San Francisco)	Telephone Camera Club of Manhattan
Miniature Camera Club of Chicago	Toronto Camera Club
Miniature Camera Club of Oakland (Calif.)	Washington (D.C.) Pictorialists

STANDING OF CLUBS

Large Clubs Advanced Class

Photographic Society of San Francisco.....	5
Pictorial Photographers of America.....	1

Large Clubs Amateur Class

Golden Gate Miniature Camera Club.....	10
Miniature Camera Club of Oakland.....	1

Small Clubs Advanced Class

The Pack Rats.....	7
Whittier Camera Club.....	3

Small Clubs Amateur Class

Washington Pictorialists.....	4
Camera Club of Long Beach.....	3
Omaha Camera Club.....	2

(Continued from Page 86)

The present picture as compared with other sand dune shots serves as an example of what is meant by simplified form. Fine as it is we consider it primarily as an indication of the direction in which Mr. Shrader is traveling, because of our belief that there are even finer things to come.

Data: 4x5" Korona View; 5¼" Zeiss Tessar; 1/10th sec. at F:22, on S.S. Pan., in D-75; P.M. C. No. 11, in D-72, partially toned. 11x14" prints on 14x18" mounts may be obtained at the price of \$5.00. Prints will be exchanged with other prize winners in these competitions only.

(Continued from Page 87)

pleasing. Therefore we believe the best solution is to add a small sprig of peppers in the lower right.

Data: 3¼x4¼" Soho Reflex; 7½" Voigtlander Collinear; 8 secs. at F:22 on E. K. Panatomic, in Metol-Pyro; by one 500 W spot and one Photoflood; Defender Velour Black I in M. Q. 11x14" prints on 16x20" mounts may be obtained at the price of \$10.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

(Continued from Page 89)

which carries the image with the fist, and giving a slight exposure to the previously dodged area with no negative in the carrier

Data: 2¼x3¼" Eastman Six-20; K.A. Anastigmat lens; 1/100 sec. at F:8 at 1:30 P.M. in August in bright sunlight on beach, on E. K. Panatomic film in Edwal 12; E. K. P.M.C. No. 11 in D-72.

Advanced Competitors

Edward Alenius, A.R.P.S., Jamaica, N. Y.
 E. J. Blandford, Montreal, Canada
 *E. W. Blew, Whittier, Calif.
 R. W. Brewer, Altadena, Calif.
 J. W. Campbell, Montreal, Canada
 Evelyn Curtis, Oakland, Calif.
 M. K. Curtis, Oakland, Calif.
 M. Desai, A.R.P.S., Bombay India
 James Emmett, Jr., Hinsdale, Ill.
 Mrs. Christine B. Fletcher, San Francisco, Calif.
 Ellis W. Foote, Pasadena, Calif.
 Norman Rhoads Garrett, A.R.P.S., Prescott, Ariz.
 E. H. Gould, Montreal, Canada
 W. Richmond Gildard, Warren, Ohio
 Frank A. Halliday, Calgary, Canada
 Stanley Harrod, F.R.P.S., Toronto, Canada
 Lionel Heymann, Chicago, Ill.
 Gregory D. Hitchcock, Altadena, Calif.

N. S. Horton, St. Lambert, Canada
 Stanley R. Jordan, San Francisco, Calif.
 W. F. Kelley, Chicago, Ill.
 R. King, St. Lambert, Canada
 *Hiromu Kira, Los Angeles, Calif.
 Fred G. Korth, Chicago, Ill.
 Paul W. Macfarlane, Claremont, Calif.
 Shavenau Monsen, Pasadena, Calif.
 *John Muller, New York, N. Y.
 George Parke, Farmhaven, Mass.
 A. T. Roberts, Toronto, Canada
 M. Arthur Robinson, Honolulu, T. H.
 John Schiede, Jr., Richmond Hill, N. Y.
 *R. Owen Shrader, Pasadena, Calif.
 Paul S. Standar, Idaho Falls, Idaho
 Gordon M. Tranter, Calgary, Canada
 *M. Bradley Williams, San Francisco, Calif.
 *Denotes prize winners.

Amateur Competitors

Stanley T. Abrams, Oakland, Calif.
 *Paul D. Ahrens, Shizuoa, Japan
 Russell C. Alexander, Long Beach, Calif.
 Rembert G. Allen, Washington, D. C.
 Dr. Herbert Antoine, San Francisco, Calif.
 Aravind, Bombay, India
 Miss Helen Louise Barham, Nashville, Tenn.
 Fred Blume, Jr., Roselle, N. J.
 G. M. Bodington, Prince Albert, Canada
 Miss Jac Bradley, Long Beach, Calif.
 B. Brixner, El Paso, Texas
 C. A. Brown, Baton Rouge, La.
 L. Brown, El Paso, Texas
 Edward Canby, Dayton, Ohio
 L. Charles-Smith, Washington, D. C.
 Josephus E. Clark, Peoria, Ill.
 R. L. Colby, Victoria, B. C., Canada
 Best O. Dawson, Long Beach, Calif.
 Wilson D. Ellis, Oakland, Calif.
 E. G. England, Jr., Durham, Calif.
 G. H. Ethington, Huntington Beach, Calif.
 F. J. Fedor, Los Angeles, Calif.
 *George Forrester, San Francisco, Calif.
 Mortimer Friedman, New York, N. Y.
 Harry Fujita, Loomis, California
 Norman L. Grant, Oakland, California
 Don C. Halsey, Los Angeles, California
 C. H. Holzman, El Paso, Texas
 Aileen Lenore Hopper, Rochester, N. Y.
 J. A. Hultquist, Washington, D. C.
 Richard Jerabek, Washington, D. C.
 Harold Jordan, Long Beach, Calif.
 Shamrao A. Kalelkar, Bombay, India
 Arthur Keen, Calgary, Canada
 Thelma R. Kent, Christchurch, N. Z.
 Mr. Lehnhardt, Huntington Beach, Calif.
 Charles Lord, Regina, Canada
 Charles Lorenz, St. Louis, Mo.
 Louis Luh, Washington, D. C.
 Mary MacLennan, Ellensburg, Wash.
 J. M. Mathews, Jr., Seattle, Wash.
 W. J. McCune, Amsterdam, N. Y.
 *Earle, McCutchan, Long Beach, Calif.
 S. C. McGregor, Flagstaff, Ariz.
 Harry Merrick, Long Beach, Calif.

Hubert M. Meyer, Schenectady, N. Y.
 Miss Velma Miles, Long Beach, Calif.
 Frank Marshall Moore, Chicago, Ill.
 J. S. Morgan, Inglewood, Calif.
 G. W. Mountford, San Francisco, Calif.
 Donald B. Myers, Brooklyn, N. Y.
 Frank S. Ordway, Claremont, Calif.
 Harry E. Perl, Alameda, Calif.
 A. W. Prasse, St. Louis, Mo.
 *Ralph Rex, St. Louis, Mo.
 F. L. Rogers, San Francisco, Calif.
 C. Ross, Calgary, Canada
 Gordon Ross, Calgary, Canada
 Mary Sale, Oklahoma City, Okla.
 J. H. Sammis, Peoria, Ill.
 E. Ashford Sampson, San Francisco, Calif.
 R. E. Schoenberger, Shaker Heights, Ohio
 George Semonson, San Francisco, Calif.
 *John G. Shortridge, Palo Alto, Calif.
 Carl T. Smith, Concord, N. H.
 Dr. Henry C. Staehle, Rochester, N. Y.
 W. R. Stillings, Calgary, Canada
 J. W. Strickler, Elmhurst, Ill.
 A. D. Sweet, San Francisco, Calif.
 Henry K. Tanaka, San Francisco, Calif.
 Joseph A. Tiffin, Toronto, Canada
 H. S. Ulan, Mt. Vernon, N. Y.
 Sam J. Vogan, Toronto, Canada
 John H. Vondell, Amherst, Mass.
 Homer Wakefield, Provo, Utah
 Paul W. Wall, Chicago, Ill.
 F. C. Ward, St. Joseph, Mo.
 Nowell Ward, Chicago, Ill.
 Henry Washburn, Santa Cruz, Calif.
 Lawrence B. Weston, Long Beach, Calif.
 E. F. Wheeler, Bristol, Conn.
 Morgan W. Wickersham, Washington, D. C.
 Edward Widdis, San Francisco, Calif.
 W. W. Wimberley, El Paso, Texas
 Alfred Wright, Philadelphia, Pa.
 O. E. Yochem, Long Beach, Calif.
 Augusta Zachary, San Francisco, Calif.

*Denotes prize winners.

Club Notes

Photographic Society of America

At the annual election of the Photographic Society of America, held on Nov. 4, the following officers and directors were chosen:

President, Dr. Max Thorek.

Vice-President, R. L. Van Oosting.

Directors for two years: Forman Hanna, Johan Helders, Wm. H. Zerbe.

Directors for three years: Wm. A. Alcock, Hillary G. Bailey, Alfred S. Banks, Sophie Lauffer.

Directors for two years, elected by clubs: Harry P. Herron.

Directors for three years, elected by clubs: Charles E. Archer, Victor K. Overman.

Arthur F. Kales, F.R.P.S.

What shall one write of a man who has passed to his reward?

Praise? Encomiums? Eulogy? All mere words which, despite the deepest sincerity, can scarcely be fashioned into more than superficial phrases.

Perhaps, therefore, it better becomes me to speak of Arthur Kales as I knew him.

Some twenty years ago our paths crossed quite by chance. When I had, with far more luck than skill, laboriously pounded out and exhibited a bromoil print, which, coming to his attention, caused him to seek out the maker of this weird type of photograph.

While he admitted being only in the snapshot stage of photography, he had already explored the mysteries of platinum, carbon and gum printing and it is likely this new medium merely disclosed a new field to conquer. Whatever his impulses may have been at the time, our circumstantial acquaintance broadened into an association which I choose to feel was mutually stimulating.

The three ensuing years brought us together in frequent exploits with the camera and altho he gained recognition in many shows during this period with bromide prints it was not until about 1921 that he got down seriously to the matter of mastering bromoil technique.

His success in this medium was not immediate—indeed it would have been but short-lived had he too easily conquered it—but reams of spoiled material attest the diligence with which he attacked an obstinate problem.

As I recall chiding him for ruining many a good bromide in his early efforts to convert its image into terms of pigment I am reminded that none of his subjects ultimately depended solely upon his mastery of technique. He made pictures which were really pictures in any medium. The enhancement consequent to the de-

lightful textures which he was able to secure in his transfers was merely circumstantial.

Dates escape me but I believe his election to membership in the Pittsburgh Salon came in his first year of exhibition work and I am certain that, resulting from the quality of material submitted to his first show—the London Salon—one subject was chosen for publication in *Photograms* of 1915.

Election to membership in The London Salon followed an unbroken sequence of acceptances by this organization and, without consulting data on the subject, I feel safe in saying that few if any have enjoyed a like continuity down to the current year.

All the honors which exhibition work has to offer had been bestowed upon him perhaps a little too early to give a greater circulation to his pictures. His prints were too fine to scatter broadcast and while he was a most prolific producer, few shows except the London and Los Angeles Salons were able to include his name in their catalogs during latter years.

Possessed of the best equipment the market offered, it cannot be said that the quality that characterized his prints was ever traceable to the mere ownership of expensive apparatus. Interesting at this point is the fact that his early successes in bromoil transfer were accomplished with an antiquated laundry mangle culled from a junk-yard. This was, however, relegated to its former status with the acquisition of an efficient machine as soon as one was finally developed.

His first exhibition work was done with a quarter-plate Sanderson field camera which lost favor to a Soho reflex. Both were lately set aside for a Contax altho little work from this miniature instrument finally reached the point of exhibition.

To the scores who have admired the work of Arthur F. Kales, let it be said that his success was attained by no short cuts. Laboriously and incessantly he devoted himself to the development of the incomparable technique which brought him international recognition.

James N. Doolittle

U. S. Camera

Editor T. J. Maloney announces that all who desire may submit photographs for inclusion in U. S. Camera—1936. Conditions of entry are as follows:

1. Any number of prints may be submitted, though each photographer will be represented but once.
2. Pictures will be chosen by an outstanding Selection Committee whose decisions are final. (1935 Committee: Steichen, Hiller, Martin, Lohse, Genthe, Bruehl, Agha, Brodovitch, Treacy.)
3. Pictures will cover all and any fields of photography.
4. Pictures must be submitted before March 1st to receive consideration. All entries should be sent to T. J. Maloney, 386 Fourth Avenue, New York City.
5. Duplicate prints must accompany original prints of all pictures submitted.
6. Postage to cover return mailing cost should be enclosed.
7. We cannot assume responsibility for pictures submitted, although all possible care will be taken to insure their safe return to the senders.

Call for Photographs

Ed. Wolff & Associates, 428 Taylor Building, Rochester, New York, advertising agency handling the account of the Bausch & Lomb Optical Co., would like photographers to submit good photographs of outdoor life suitable for the illustrations of binocular advertising. Bird, game, sports and marine photographs, or any other subject in which binoculars could be used to advantage are desired.

Photographs submitted should carry prices.

19th Los Angeles International Salon Coming to San Francisco

For the past several years the Los Angeles International Salon has been regularly exhibited at the De Young Museum. This year because of extensive remodeling of the Museum the exhibition will be seen in the sixth floor auditorium of The Emporium, Market St. between Fourth and Fifth Sts. This exhibition is generally conceded to be one of the finest shows assembled in this country, so photographers within traveling distance of San

Francisco should certainly not fail to visit the show. It will be on display from Feb. 10 to 29th inclusive.

Second International Leica Exhibit on Tour

The Second International Leica Exhibit which created such a sensation at Radio City in New York City during November and December is now on a tour of some of the principal cities in the east. This collection of outstanding Leica pictures includes prints by famous professionals as well as amateurs. The range of subjects treated and covered includes an almost unbelievable variety of photographic activities. Candid, news, clinical, scientific, color, aerial, pictorial, portrait, surgical—are just a few of the many uses to which the Leica serves, as shown in this exhibit.

In connection with the Second International Leica Exhibit, a local Leica contest is held in each city. Local Leica-ites are invited to submit their best prints in competition for merchandise awards and prizes. The itinerary of the Second International Leica Exhibit is herewith given, and interested readers should secure complete details from their local photo dealers who will be in possession of the final details by the time this appears.

No one should miss this outstanding display of modern miniature camera technique. Admission is free. In most cases, a special illustrated Leica lecture will be given in connection with the exhibit.

Boston, Mass.—Jan. 21st to and including Jan. 25th. Hawthorne Room, Parker House.

Providence, R.I.—Jan. 28th to and including Feb. 1st. 2nd floor—Arcade Bldg.

Syracuse, N. Y.—Feb. 5th to and including Feb. 8th. Onondaga Hotel—Roof Garden.

Rochester, N. Y.—Feb. 11th to and including Feb. 15th. Seneca Hotel—Mezzanine Floor.

Buffalo, N. Y.—Feb. 18th to and including Feb. 22nd. Statler Hotel.

Toledo, O.—Feb. 25th to and including Mar. 1st. Toledo Museum.

Cleveland, Ohio.—Mar. 3rd to and in-

cluding Mar. 7th. Higbee Co.—Lounge Room.

Detroit, Mich.—Mar. 10th to and including Mar. 15th.

Chicago, Ill.—Mar. 18th to and including Mar. 24th. Blackstone Hotel.

Milwaukee, Wis.—Mar. 27th to and including Mar. 30th.

Minneapolis, St. Paul, Minn.—Apr. 2nd to and including Apr. 6th.

St. Louis, Mo.—Apr. 9th to and including Apr. 14th. St. Louis Public Library.

Indianapolis, Ind.—Apr. 16th to and including Apr. 19th.

Cincinnati, O.—Apr. 22nd to and including Apr. 25th. Netherland Plaza—North Exhibit Hall.

Columbus, O.—Apr. 28th to and including May 1st.

Pittsburgh, Pa.—May 4th to and including May 9th. William Penn Hotel.

Baltimore, Md.—May 12th to and including May 16th.

Washington, D. C.—May 19th to and including May 23rd.

Philadelphia, Pa.—May 26th to and including June 3rd. Boyer Galleries—Broad St. Station.

Nickolas Boris

Nickolas Boris, F. R. P. S., internationally known pictorialist, died in Cincinnati on November 18, in his thirty-fifth year. Born in Patras, Greece, he studied art in Athens and came to this country to take up the camera as his life work. Well known as he was as a portrait photographer, it was his work as a pictorialist which gave him his international reputation. He concentrated on figure studies and became a master of light and shade. This combined with his great knowledge of art principles enabled him to produce pictures which were hung in all the principal photographic salons in the world. As president of the Photographic Society of Cincinnati he was a never failing source of inspiration to his associates. A shining light in the photographic world has been extinguished.

Notes and Comments

Pola-Screen Prices

In our November issue we published an article on the nature and uses of the Eastman Pola-Screen. In a footnote to that article we stated an approximate price which we later discovered was badly out of line. We called attention to this in our December issue explaining that the Eastman Company had not as yet set prices on the screens. We now learn that Type I Pola-Screens are available. Type I is for use over the camera lens. Type II screens, for use over a light source, will be available later. Prices for Type I screens are as follows: \$12.00 for 2½" size, \$18.00 for 3½" and 27.00 for 4½". Lens hood and screen holder for the same sizes retail at \$8.00, \$9.50 and \$12.00 respectively.

Rubberline

This is a most efficient coating sub-

stance for tanks or trays. It has been on the market for several years but has not been previously called to the attention of photographers. It is acid and alkali resistant and will adhere permanently to any clean surface, steel, wood, galvanized iron, enamel etc. It does not become brittle and will make virtually any container leak-proof. Enamel trays that have become cracked can be reclaimed with a coating of Rubberline, while wooden tanks that have developed leaks can easily be made perfectly leak-proof. The substance is melted in the can in which it is sold and then simply flowed over the surfaces to be treated. It is offered in 2½, 5, and 10 lb. tins, at the prices of \$1.25, \$1.75, and \$2.25 respectively. Sole distributors are Burke & James, 225 W. Madison St.,

Chicago, Ill. They will send you free of charge a pamphlet which fully describes this product.

Photography Contribution to Safety Campaign

Given tremendous impetus by the widely read article—"And Sudden Death" the campaign for safer driving is rapidly assuming major proportions. We are happy to report that the large photographic firm of Kaufman & Fabry, 425 So. Wabash Ave., Chicago, Ill., is performing a major service in this work by offering a striking series of dramatic photographs depicting the costs of reckless driving to editors and publishers throughout the country free of charge. Congratulations on a fine public spirited action.

Oakland Camera Exchange

The Oakland Camera Exchange, 376 14th St., Oakland, Calif., specializes in handling used equipment and in offering such at bargain. At this writing we wish to correct an error which appeared in their December advertisement. The last item in the ad should have read: Stereo Gaumont 413 cm., paired Krauss Tessars F:4.5, with adapter and case, \$35.00.

New Victor Catalogue

James H. Smith & Sons Corp., Lake & Colfax Sts., Griffith, Ind., have just published a most informative catalogue describing in detail the complete line of Victor equipment for flashlight work both with powder and with photoflash bulbs. The firm also offers an extensive line of other lighting equipment, an intensifier, an opaquing substance, spotting colors, and several other useful articles. They will gladly send a free copy of the book to anyone reader mentioning this notice.

New Developing Aid

The R. J. Fitzsimons Corp., 75 Fifth Avenue, New York City, announces F.H.S. (Fitzsimons Hardening Solution), a new concentrated solution which, when added to a specified amount of water, produces an ideal film preservative. It is particularly recommended for all miniature camera films, as it removes that serious bugaboo (scratches, abrasions and similar

disfiguring marks) which exasperates most cameraists, particularly as it is usually the best negatives which become afflicted with such markings.

F.H.S. contains certain hardening chemicals which render the delicate emulsions leather-tough. Recent tests with film subjected to F.H.S. treatment disclosed the fact that even warm water will not cause softening or frilling—a very convincing test.

Indicated for all films, F.H.S. is also suggested for the hardening of positive film strips and similar transparencies. The constant rolling and unrolling of such films ruins them in a short time through the accumulation of scratches. Films treated with F.H.S. successfully resist all abrasive action, thus making it possible for the films to last practically indefinitely.

F.H.S. is intended as a companion product to M.P.G., which has through the past year won its laurels as an outstanding fine grain prepared developer. F.H.S. bids fair to become equally popular, specially among miniature camera workers. Write for a new circular describing both the new F.H.S. and M.P.G., now available from the R. J. Fitzsimons Corporation, 75 Fifth Ave., New York, N. Y.

New Adjustable Developing Tank

A new adjustable developing tank has just been announced that will accommodate film of either V. P., $2\frac{1}{4} \times 3\frac{1}{4}$ " or $2\frac{1}{2} \times 4\frac{1}{4}$ " sizes. Adjustment to the various sizes is made by merely changing a single screw. The tank is economical in use as will be evident from the fact that it requires only 12 ounces of solution, which may be poured into the tank in the light once the reel has been loaded and the cover placed on. Cleanliness and safety in use are assured for the tank is constructed of stainless Monel metal. Write to Central Camera Company, Dept. C-1, 230 So. Wabash Ave., Chicago, Ill., for full information and while you are about it, do not fail to ask for that firm's two new publications, which may be obtained free of charge. These are Central's Photographic Almanac, containing much useful information for the photographer, and

the new Inventory Clearance Book, listing hundreds of remarkable bargains in both new and used equipment.

Are You Going to Mexico?

Mexico has become the most recently discovered photographer's paradise. Picturesque inhabitants, interesting architecture, beautiful scenery, and a perfect climate for photography have combined to make this attractive country a Mecca for American photographers. Those who plan to photograph in Mexico will welcome the address of a well stocked modern photographic supply shop. You will find that Foto-Mantel-Sucr., Rudolf Rudiger, Calle Ven. Carranza No. 11, Mexico City, Mexico, Post Box 1459, meets all of these requirements.

Fine Grain Information

Mr. H. O. Bodine, of Photo Crafts Laboratory, Wantagh, L. I. N. Y., informs us that his firm will issue within a short time a new and greatly expanded catalogue of their products and that this catalogue will contain a number of new items recently added to the line. Notable among these is a complete new line of fine grain developers in powder form. At the same time the firm will issue a booklet "giving a most complete analysis of the principal fine grain developers on the market together with the technique of handling these, as advocated by recognized fine grain authorities. A complete thermo and contrast gamma chart is included based upon the results of many months of research and tests, and compiled in response to the requests of many friends located in all parts of the world." It would be well to write for your copy of these two useful booklets today.

Willoughby Stirring Rods

Willoughby's, 110 W. 32nd St., N.Y. have just placed on the market the most practical stirring rod that we have seen for many a day. It is made of some unbreakable composition material, is $10\frac{1}{4}$ inch long, is tapered in shape, and is $\frac{5}{16}$ of an inch in diameter at the business end. This last is important for it insures sufficient surface so that lumps can be broken up without indulging in an infinite series of exasperating spearing operations. The

rods come in sets of three, colored red, white, and black at the very reasonable price of \$.60 the set.

Abe Cohen's Clearance Sale

As may be noted from the advertisement appearing in this issue Abe Cohen's Exchange, Inc., 120 Fulton St., New York, N. Y. is now conducting a clearance sale in which some unusual bargains are offered. If the particular item you want is not listed do not hesitate to write for this firm carries one of the most complete stocks of new and used equipment in the country and their bargain prices are really bargains. All items are sold on a ten days trial basis that insures your satisfaction.

Tri-Tiltop

The Tri-Tiltop fits any camera or tripod possessing standard sockets and screws. It is a combination tilting device and panoraming tripod top. It can be tilted to any angle and rotated to any degree of the complete circle. The circle engraved on its base plate affords an accurate means of registering component parts of a panorama. This valuable accessory sells for only \$2.50. Complete descriptive literature may be obtained without charge from Henry Herbert, 483 Fifth Ave., New York, N.Y.

Best-Test White Rubber Paper Cement

There are two factors which largely determine success in mounting with rubber cement. First use a proper cement. There are a number of the dark colored cements that show through a single weight paper in spots, and some that have a high enough sulphur content to have a damaging effect upon the paper. The cement named above is especially made for use with papers, is white in color and consequently is free from the defects mentioned. Second, give two coats. One on the mount, and one on the print and place the two in contact under pressure when the cement has just begun to dry so that it is tacky to the touch. A good job is insured if prints are mounted in this way under reasonable pressure. The Union Rubber and Asbestos Co., Trenton, N. J. is offering Best-Test White Rubber Paper Cement in 4 ounce cans with Brush-in-Cap, at only \$.25. From

your dealer or direct from the company at the above address.

Wollensak Lenses

The Wollensak Series II Velostigmat F:4.5 is a splendid lens for all-around portrait work, or for copying or enlarging. Its speed makes it very suitable for catching fleeting expressions, or for photographing children without forcing them into rigid poses. The Wollensak Optical Co., 971 Hudson Ave., Rochester, N. Y. is now offering a complete catalogue of their lenses free of charge. Write for your copy today.

Medo Photo Supply Corp. in New Quarters

On or about Jan. 15, 1936 the Medo Photo Supply Corp. moves into their new premises at 15 West 47th St., New York, N. Y., "Just off Fifth Ave.,". A much larger space than was previously occupied has been leased, so with the added facilities thus obtained the capable staff maintained by the firm will be able to serve their many customers even better than in the past. New Yorkers should certainly visit the new store, and with the expansion that this move presages photographers in all parts of the country will no doubt be hearing more and more from this progressive organization.

Kalart Speed Flash

The Kalart Company, manufacturers of apparatus for photoflash synchronization, announces in the advertising section of this magazine its new Speed Flash, a junior edition of the Kalart Model C Photoflash Synchronizer.

Retailing at \$11.25 complete, the Speed Flash operates on all shutter speeds. It attaches quickly to all cameras without special fittings and is as simple in operation as pressing a cable release for ordinary exposures. Thus it is possible, by means of the Speed Flash, to obtain stop motion photographs at 1/100, 1/200, 1/300 or 1/500 second, the limiting factor being the top speed of the compur shutter itself. It is a precision instrument capable of producing for amateurs and professionals alike a quality of work hitherto restricted because of the higher prices asked for equipment of accuracy and dependability.

The Speed Flash may be tried on your own camera at any good photo shop, while literature may be obtained directly by communicating with The Kalart Co., 58 Warren St., New York City.

Foth-Flex, 1936 Model

As announced in the advertising section of this month's **Camera Craft**, the Foth-Flex, 1936 model, can now be seen at leading camera shops. The Foth-Flex is a reflex camera of the twin lens roll film type using No. 120 film to produce twelve



Foth-Flex

exposures, $2\frac{1}{4} \times 2\frac{1}{4}$ ", per loading. Outstanding improvements are: Variable aperture focal plane shutter delivering speeds from 2 seconds up to 1/500; built in self-timer giving approximately 8 seconds to get into the picture; f 3.5 Foth Anastigmat lenses for both taking and viewing; built in magnifier for micrometer focussing; automatic film counter; cable release; correction for parallax at close range. Further information and descriptive literature can be obtained from the distributors, Home Camera Co., 129 West 22nd St., New York City. The camera is scheduled to retail for \$48 complete. Proxar lenses; carrying case; sunshade and filters are listed as extras.

New Kodachrome Processing Station

Eastman Kodak Company has opened another completed Kodachrome processing depot at Chicago. There are now three such stations in the United States, the two others being located at Rochester and Los Angeles. The address of the Chicago station is 1727 Indiana Avenue.

Stoneware Vats, Trays, Etc.

The U. S. Stoneware Co., 50 Church St., New York, N. Y., have recently issued Bulletin 103 which describes in detail the Vats, Trays, Tanks, Jars, etc., which the company manufactures for photographic use. The Bulletin also contains drawings showing a plumbing system for roll-film tanks. Write to the above address for your copy of this bulletin.

Britelite Truvision Screens

Those who desire a high quality Crystal Beaded Screen, in any popular size and at a price that will fit your purse should certainly investigate the screens sold under the above name and manufactured by Motion Picture Screen and Accessories Co., 520C West 26th St., New York, N. Y. Full descriptive literature will be sent without charge. The firm also offer the Triple and Big Ben reflectors, efficient lighting units for still or motion picture photography.

Eastman Announces Magazine Cine-Kodak

Eastman Kodak Company has produced a new 16 mm. Cine-Kodak loading with a magazine and having other features further simplifying the taking of motion pictures by the amateur and at the same time providing him with increased versatility of operation.

In addition to the use of a magazine, thereby eliminating the operation of threading the film, the new camera has three speeds, interchangeable lenses, a device that prevents accidental exposure while the camera is not in use, an automatic shut-off for the spring motor, and an ingenious device described as a "pulse" for timing the length of scenes.

Appropriately named "Magazine Cine-Kodak," it can be loaded in 3 seconds, merely by opening the hinged cover of the camera, as if it were a book, slipping the



Magazine Cine-Kodak

magazine inside and closing the cover, without having to adjust a single thing inside the camera or on the magazine. Sliding a finger tab on the top of the camera releases the cover for opening and locks it when closed. A further slide of the tab sets the mechanism for operation. Until this is done, the mechanism remains locked and there can be no accidental exposure.

Another eminent advantage is the ability to exchange partly used film for another type without having to run the entire footage to do so. Thus, to switch from Panchromatic to Super Sensitive "Pan" for indoor pictures or to Kodachrome for color "movies," it is only necessary to remove the partly used magazine and replace it with a magazine loaded with the film desired. A magazine can be removed without the necessity of wasting a single frame of film because of a protecting slide which is moved over the film aperture of the magazine by the same operation that unlocks the cover of the camera. One may have any number of partly used magazines which may be returned to the camera to complete the exposure. The magazine protects the film. A footage meter on each magazine shows how much film has been used, whether in or out of the camera. The dial may be plainly seen through a shatter-proof window in the camera cover.

The Magazine Cine-Kodak also gives the amateur increased versatility in speeds. There are three of them—normal, half speed and slow motion—controlled by a lever located beneath the built-in expo-

sure guide on the front of the camera and marked '8,' '16,' and '64.'

The new and intriguing device called a "pulse" is located in the side of the camera—a tiny button over which the finger is placed and which "beats" every half foot, or 20 frames, while the film is being run. This is of great convenience in timing the length of a scene.

For the Magazine Cine-Kodak are supplied the same accessory lenses available for Cine-Kodak K and Cine-Kodak Special—the 2-inch f.3.5 and the 3, 4½, and 6-inch f.4.5 telephoto. There is an inexpensive adapter which fits them to the camera by a simplified method. To make a change to any one of the four, the standard f.1.9 lens is removed merely by pressing a button, and turning the lens. The adapter fits as easily in its place. Then the other lens is fitted on by sliding a lug on the lens into a slot in the adapter; the rotating collar is given a turn or two, and the lens is set in positive, taking position.

In focusing, guess work and squinting are taken out by the full-vision eye-level finder system, which competently serves all lenses. The front view finder has two elements. Together, they show the field of the standard f.1.9 lens. By sliding the rear element backwards along a track it "clicks" into a notch identified by an arrow as the position for use with the 2-inch lens. Another move backward and it further narrows the field as it slides to the position for the 3-inch lens. Again in the same way for the 4½ and 6-inch telephotos.

Two other salient features of this camera are the secured winding crank, which swings back into a notch in the case when not in use, and an automatic shut-off for the spring motor, which insures against over-exposure when the motor is in need of winding. All in all, Magazine Cine-Kodak constitutes a notable advance by Eastman in the further simplification of home "movie" making.

Magazine Cine-Kodak with Kodak anastigmat f.1.9 lens retails at \$125; with combination sole leather carrying case, \$137.50. Besides the camera, the case has room for one extra magazine or telephoto lenses and filters.

Central Bargain Book

The Central Camera Co., 230 So. Wabash Ave., Chicago, Ill., have just issued a new sixteen page bargain book containing a complete listing of up-to-the-minute specials in new and used photographic equipment and accessories. There are a tremendous number of wonderful buys listed in the book. Write for your free copy today so that you may have your choice of the bargains.

The New Bee Bee Enlarger

The firm of Burleigh Brooks of 127 West 42 Street, New York, announces the Bee Bee Enlarger, a precise and up-to-date apparatus for advanced amateur and professional use.

Features: Large, scientifically constructed lamp-house which can be tilted to obviate distortion. Lamp-house contains an adjustable rod for focusing bulb which can be turned laterally for the purpose of attaining a white field of light; readily detachable lens board 2¾" square takes 2 or more lenses of different focal lengths. A slight pressure on protruding knob actuates a metal slide which immediately releases the lens board. Other refinements include: extremely long, leather bellows operated by rack and pinion, negative carrier for either cut or uncut film, a slot in negative holder to take metal masks in various sizes, iris diaphragm with scale indicating exposure time, swinging red disc to enable placing paper on board, light control switch which regulates illumination time, Opal Glasses. Enlarger is capable of being rigidly locked by means of three substantial bolts. Another feature is the metal rod in the Universal Holder which when pressed, separates the glasses so that film can be pulled through without scratching. All metal parts are nickel-plated fire-proof frosted, enameled metal. The apparatus is fastened to a base-board prepared of the best ply-wood, size 15x17".

The Bee Bee Enlarger is obtainable in two models: III and IV Model III is intended for 3½"x3½" and smaller negatives. Magnification up to 7½ diameters but if Enlarger is reversed enlargements of much greater size are possible. Re-

ductions are also feasible by means of long bellows extension. Light Source: White Ray Special Enlarging bulb, 65 watt. Photo-flood bulbs can also be used. With $4\frac{1}{8}$ " f/4.5 lens, \$85.00. Model IV conforms to specifications of Model III except that raising or lowering of lamp-house is accomplished by means of a revolving wheel. Takes 5x5" negatives and smaller. Magnification up to $4\frac{1}{2}$ diameters. Greater magnification may be obtained by turning the entire lamp-house

to a horizontal position and locking it in place. Enlargements of any size, depending on distance paper is placed, are then possible, as well as its conversion into a Projector. With $5\frac{1}{4}$ " f/4.5 lens, base-board and special White-Ray Enlarging bulb, \$110.00.

Although these Enlargers are complete in themselves, a wide diversity of accessories including Condensers, Schneider Lenses in various foci, etc., are obtainable.

Our Book Shelves

L' Art De Voir et la Photographie (The Art of Seeing and Photography) by Marcel Natkin. Published by Editions Tiranty, 103 Rue Lafayette, Paris, France. $8\frac{1}{2}$ "x11", 72 pages. 48 illustrations, paper bound. Price in France 27 francs, in other countries, 32 francs.

Here is a book that every photographer with the ability to read French should not fail to obtain. We cannot refrain from expressing the wish that more such intelligently prepared and beautifully produced books were available to photographers. The illustrations are in photogravure of superb quality, while the typography is a work of art in itself.

This book however has much more than beauty to recommend it. It contains a remarkably clear and instructive discussion of the principle esthetic problems confronting the photographer. The text is made doubly lucid and useful by being fully illustrated with pictures carefully selected to show graphically the points under discussion. Text and pictures are on facing pages throughout. The discussions are arranged under six general headings: "The Great Currents of Photography", "Composition", "Light", "Relief and Motion", "Personality", and "Nature". Under each heading there are from four to seven essays on important aspects of the general theme.

The Body Beautiful. Edited by Heyworth Campbell, published by the Dodge Publishing Company, of New York. $8\frac{3}{4}$ "x11 $\frac{3}{4}$ " spiral bound, \$3.00.

This volume contains 75 examples of photography of the nude, plus two brief introductions written by Heyworth Campbell and Dorothy Cocks. The pictures should prove most interesting and instructive to the student in this field for they give as a whole, a fairly comprehensive indication of the modern approach and treatment of such subject matter, both outdoors and under artificial light. The collection does give an adequate cross-section of what is being done with the nude from the modern viewpoint, but there is nothing that is truly representative of the large volume of good work that is being turned out by what may be called the "romantic school". Looked at strictly from the artistic point of view the work is rather uneven in quality. There are some remarkably fine things and a few, notably most of those credited to Globe Photos, whose inclusion hardly seems justified. Pictures which particularly appeal to the writer are, Fred P. Peels well known "Mural Section", an unusually fine male figure by Werner W. Greeven, an exceedingly clever combination of a figure with the circle of illumination from a spotlight, by Hal Phylfe, and a very beautiful torso by Ullberg and Oliver (#61). The reproductions are in photogravure.

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Items advertised in these columns may be purchased C.O.D. subject to examination and C.O.D. subject to ten days free trial if sent by express. If in doubt, safeguard yourself.

OUTFITS FOR SALE

◆Series D Graflex $3\frac{1}{4} \times 4\frac{1}{4}$ I-C Tessar F:4.5, FPA, Case, new, \$87.50. E. B. Williams, P. O. Box 176, Bald Knob, Ark.

◆Leica Model F with Elmar F:3.5 lens. Excellent condition. \$95.00. B. Brixner, 1002 E. Silver Street, Albuquerque, New Mexico.

◆Century #3 camera stand; Portrait camera with $6\frac{1}{2} \times 8\frac{1}{2}$ back, double holder and kits; $6\frac{1}{2} \times 8\frac{1}{2}$ View camera (takes same holders); also, 1—5x7, 1—4x5, 1—P.C. size with lenses and shutters; 1 shutter $2\frac{3}{4}$ in. opening. All good condition and priced to sell. Swanets' Studio, 323 Fifth St., Santa Rosa, Calif.

◆Eastman View 5x7. Plantograph lens and shutter \$4.75. RR and shutter \$1.95. Reflex Box \$13.75. #3 Roll Film f:6 \$14.50. Anastigmat and Compur f:4.8. 3A Kodak Box \$2.00. 2C Kodak Box \$2.50. Clarke, c/o Camera Craft, 703 Market St., San Francisco, Calif.

◆8 inch Cirkuit Camera, perfect condition, \$150.00. Eastman View Camera 5x7 size, \$20.00; 16 Premo Holders for films or plates 50c each. 8x10 View Camera, 5 holders for plates or films, lens and compound shutter, \$30.00. Charles Summer, 22 South Park, San Francisco, Calif. Phone, SUTter 6988.

LENSES FOR SALE

◆Lens Bargain! Gundlach-Manhattan (Rochester) 8x10 Portrait F:5, iris diaphragm, mounting flange. Just like new; sacrifice for best cash offer or will consider good portable radio trade or part payment. A. S., c/o Camera Craft, 703 Market St., San Francisco, Calif.

◆9 $\frac{1}{2}$ " f:4.5 Conley Anastigmat Portrait, 4 degrees diffusion in Optimo shutter. \$25.00, or trade for 7 inch or 7 $\frac{1}{2}$ inch F:4.5 Tessar in barrel. L. I. Gulich, P. O. Box 699, Casper, Wyoming.

INCOME from your camera instead of expense. Low-cost, home course teaches you to make photographs for magazines, newspapers, advertisers. Tremendous demand. Earn good money wherever you live. Free book. Universal Photographers, Dept. K, 10 West 33rd St., New York.

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William Mortensen

The Circle Of Confusion

William Mortensen

Focal Length in Portraiture

WHEN the rays of light from an object are converged by a lens into an image, every point in the object appears as a more or less diffused spot of light. To reduce these "circles of confusion", as they are called, to their smallest possible diameter is one of the problems that confront the designer of lenses.

There are phases and problems in photography about which there seem to be inscribed similar circles of confusion—confusion in thinking, confusion in technique, confusion in ideas and ideals, confusion as to the true ends and aims of photography, confusion induced by old bugaboos and ancient superstitions. Only by clearing up some of this confusion will it be possible to get a clear picture of what this thing called photography really is.

Such a circle of confusion may be drawn about the region occupied by choice of focal length in portraiture. From the very early days of photography the superstition prevailed that the only proper lens for portraiture was one of long focal length. Those readers who are past a certain age will no doubt remember, among the more vivid episodes of their childhood, their experience in a portrait studio—the photographer hiding his head ostrich-like, the camera huge and hulking as a beer truck, and the lens on the front of it that transfixed them with its unwinking malefic glare. Very probably this lens was a Verito of at least fourteen inches focal length. For in those days a portrait photographer without a long focal length lens was unthinkable. To take a portrait with a short focal length lens—well, it simply wasn't done. For a portraitist to func-

tion without a lens of fourteen inch, sixteen inch, or twenty inch focal length (if he wanted to do the thing up properly) would not merely have been unprecedented—it would have been a grave social error.

In part at least the motion pictures have helped in breaking down this prejudice. Speed, depth, and definition are all absolute requisites of motion picture work, and are impossible of simultaneous achievement by old style equipment. Such a picture as Figure 1, for example, (a souvenir of my days as a "still-cameraman", taken during action) would have been impossible except with a lens of short focal length.

Nowadays, although photographers are gradually adopting equipment of less heroic dimensions, the impression still persists that a portrait demands the use of a long focal length. Many amateurs earnestly believe that a long focal length lens produces truer drawing and truer perspective than one of short focal length. This is, of course, entirely false. A lens can no more change perspective than it can see around a corner. Set up a tripod in front of the facade of a building or of a human countenance, and attach to the tripod in succession a camera with a pinhole, a short focal length lens, and a long focal length lens, and finally look at the object from the same viewpoint, and all three cameras will record the object in exactly the same drawing and perspective as your eye sees it. The only difference will be in the size of the image. The lens of long focal length, in opera-glass fashion, moves a distant object into a nearer plane of vision. This operation of bringing the perspective and drawing of a thing seen twenty feet away up into the very front plane of vision is what the advocates of long focal lengths humorously call "correcting the perspective".

It is when an amateur, seeking to get a larger image, recklessly and inexpertly moves up on his subject that unpleasant perspectives are obtained with short focal lengths. Only by inexpert handling, or by malice aforethought, is it possible to obtain such monstrosities as we all have seen exhibited as though they were typical products of this sort of lens. Feet projected toward the camera so that the rest of the body is barely apparent, an automobile photographed head-on so that it is a Cadillac in front and an Austin behind, a schnozzle that looms from a face like the Matterhorn—such things are not the fault of the lens, but of the arrangement of the material. Some of the alleged "awful examples" are obviously concocted. A photographic annual of two years ago displays a particularly egregious specimen of such manufactured evidence. There are customary two examples—a portrait with a short focal length, and the same portrait "corrected" with a long focal length. Certainly the nose in the first juts out of the picture in a very arrogant and displeasing manner, and this fault does not appear in the second picture. BUT—the head in the first is nearly twice the size of that in the second. Also the pose of the head, full-face in the first, is altered to a three-quarter view in the second picture, thus bringing the face more nearly into a single plane conformation. Furthermore, the light in the first is so placed as to exaggerate the width and projection of the



William Mortensen

*Fig. 1. Action "still" from Cecil B. DeMille's
production "The King of Kings".*

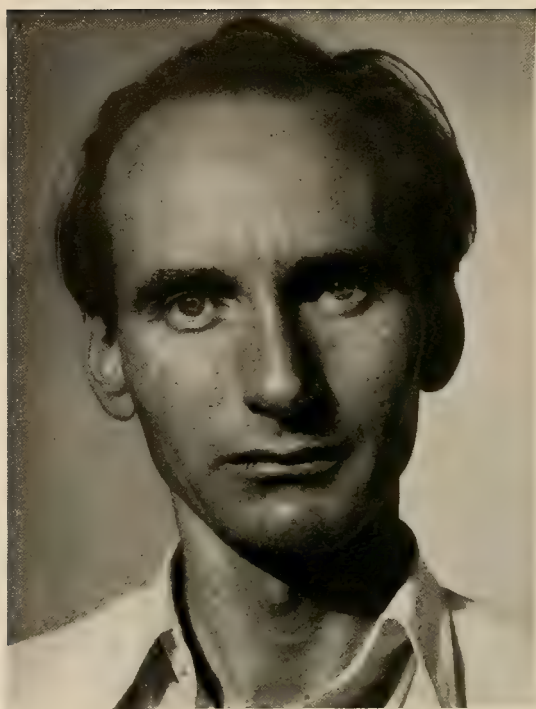


Fig. 2

nose. Figure 2 and Figure 3 show a similar pair of pictures. But both pictures in this case were made with the same lens—which was of short focal length.

It is not perspectives that need correcting, but arrangements, and sometimes also the artistic ideals of the photographer. If he is guided by good sense and an appreciation of the limitations of his medium he will not go astray. For large character heads that are to give a "face-to-face" impression, the short focal length is absolutely logical. A person would naturally be met and talked to at about the camera distance of the short focal length lens. Figure 4 shows a "portrait" in which, although the nose is pointed directly at the camera, there is no impression of unpleasant distortion. When this picture was taken (with a 50 mm. lens on a Model A Leica), the end of the dog's nose was not more than two and a half feet from the lens.

A much more important consideration than perspective is the matter of *depth of field*. With a lens of long focal length, with a workable aperture, the depth of field—i.e., the distance between the near and far planes that are in focus—is a mere narrow zone not more than a foot in thickness, in front of which and beyond which all objects fall off abruptly into fuzzy indistinctness. The effects of this slight depth of field are very familiar in studio portraits of a certain type—the nose sharply in focus, the cheeks slightly out of focus, the ears fuzzy and a woolly halo around the head.



Fig. 3

Depth of field varies inversely as the focal length. Thus a six-inch lens has twice the depth of field of a twelve-inch lens, and a three-inch lens has four times the depth. Hyperfocal distances are correspondingly less with a lens of short focal length, so that with less stopping down it is possible to extend the rear plane of focus to infinity.

It would seem that absolute and clean-cut definition was such an indisputable characteristic of photography and of the graphic arts in general that there should be no need of laboring the point. But such is the infatuation of the partisans of the long focal length that they construe its faults as virtues and actually praise it for its optical shortcomings.

For example, in portraits and pictorial studies of a certain well-known type, the wooliness of everything except the principal object is justified (by these partisans) as a method of pictorial subordination and indicating the recession of planes. This method of presentation is further justified by them on the grounds of physiological accuracy; i.e., the eye in focusing on a near object diffuses a distant one and *vice versa*.

That the eye cannot simultaneously bring close and distant objects into sharp focus is, of course, true; but it is a fact quite irrelevant to pictorial art. Equally true, and equally irrelevant, is the fact that the image on the retina of the eye is presented upside-down. Ordinarily, we are not conscious at all of the eye's failure to simultaneously focus near and far objects; only by observation do we discover the fact. In-

deed, a fuzzy contour in a picture seems so unusual and strange a thing that it attracts attention to itself, and thus defeats the very subordination that was sought after. Such a phenomenon as often appears in portraits of the long focus school—the tip of the nose sharply defined and the ears diffused—could not possibly happen in actual experience unless the eye of the observer were placed within a few inches of the end of the nose. And such a viewpoint as this could only be rendered logically by a short focal length lens; yet the long focal length lens presents this absurd falling away from definition in terms of the drawing of the face *seen twenty feet away*. Which shows the utter inconsistency of the longer focal lengths.

Ordinarily we are not in the least aware of any difference in definition in things at various distances from the eye. The mechanism of the eye instantly accommodates itself to the various distances as the attention shifts from one plane to the other. So psychologically, the total visual picture presents itself in sharp focus throughout.

The varying muscular strains within the eye as it accommodates itself to various distances provide one of the ways in which we are made aware of the recession of planes in the visual field. This fact is of course not applicable to the graphic arts which work in a medium of a single plane; but there are numerous accepted and well-tested methods or conventions through which this recession may be adequately expressed. Let me list some of these.

Tone

(Aerial perspective). Planes grow lighter in key as they recede from the eye. This effect is clearly seen in the tonal relationship of the successive ridges of a mountain range. For the sake of sharply distinguishing planes, the graphic arts frequently exaggerate the effect.

Perspective

Recession of planes and the representation of solid forms is indicated in art by linear perspective. Strict perspective, which is a geometric science, is subjected by artists to numerous distortions and conventional modifications for the sake of greater conciseness or expressiveness. Note, for example, the use of isometric perspective by Japanese artists.

Drawing

There are numerous devices belonging to the symbolic "short-hand" of the graphic artist by means of which he summarily indicates the space relationships of the planes in his picture.

Light and Shadow

Form and relationship in space are perhaps most vividly indicated by the play of light and shade. In portraiture a strong and concise suggestion of recession is given by the gradual diminution of the illumination of a surface as it curves away from the light.

Notice that indefinition, fuzziness and diffusion are not included in the preceding list. These are merely unpleasant features of bad photography, and most frequently result from the needless use of the long focal length lens.



William Mortensen

Most of these graphic methods of indicating recession that we have just mentioned are available to the photographer.

Tone

(Aerial perspective). Variations in tone due to aerial perspective are generally clearly indicated in literal photographic representation. Should it be desired to alter or emphasize recession, there are various methods of controlling tone for this purpose. A frequent motion picture practice in exterior shots is to veil the middle distance with smoke. This veiling lightens the tone and reduces contrasts, but *does not* reduce definition. In portrait and pictorial work, tone is subject to accurate control through "local printing" and "dodging". By these means backgrounds may be subordinated to the degree desired.

Perspective

In literal photographic representation perspective is, of course, accurately rendered. But it is subject to expressive control through the device of "forced perspective". In motion picture sets this device frequently makes it possible to suggest huge spaces within small areas. It consists merely of creating an illusion of perspective by arbitrarily diminishing the size of objects in distant planes. With pictorial subjects forced perspectives may often be advantageously applied in building up backgrounds.

Light and Shadow

Within certain limits of contrast and colour, photography has all the facilities of the other graphic arts for indicating recession by the play of light on surfaces. By lighting of "Basic" quality it is possible to give an almost completely conventionalized impression of the relationship of forms.

A photographer having available all these devices and methods for indicating recession (which are entirely in the tradition of the other graphic arts) has neither need nor justification for resorting to such a poor subterfuge as lack of focus.

For portrait and pictorial work the short focal length lens fills all needs. It has speed, depth, and definition beyond anything that long focal lengths can offer. The fact that short focal lengths produce apparent distortions at close range proves an advantage in the long run, for it compels the impetuous pictorialist to take some note of the composition and arrangement of his material. Finally, as an all-purpose lens, it frees the amateur from the crushing conviction that, if he is to hold his head up in the photographic world, he must own at least three, and preferably five, lenses. Only by bold acts of simplification can he hope to break through the Circle of Confusion with which the gadget-makers have surrounded him.

Advantages Of A Wide-Angle

Fred G. Korth

THERE was a time not so long ago, when pictorialists shouldered their heavy view cameras with soft, long-focus lenses and spent Sundays making their own picture postcards. Landscapes with clouds and beautiful trees made everybody happy. Portraits were the only other field to be mastered with such equipment. A focal length of 10 inches was considered the absolute minimum for a 4:5 negative. At that time every automobile ad had a hand-drawn border of tulips or roses according to the season.

How recently has all that been changed? Sharp and fast lenses of shorter focus and smaller cameras are here to stay. Many old-fashioned rules of composition have been thrown over board. Today's amateur pictorialists are imitating the best professionals whose work they can study in each new issue of *Vanity Fair*, *Harper's Bazaar*, *Fortune*, *Technology Review* and a lot of other publications. The notion is being abandoned, that photographs taken commercially cannot be considered "pictorial". After all, most of the old masters of the brush worked on assignment for pay.

Photographs, to create attention today, must be unusual and original in some way. This is even more true regarding amateur activities than it is in regards to the work of the professionals. Wide-angle-shots and intimate close-ups of small objects are some of the most interesting. In order to study these branches the writer some years ago looked for a special lens and discovered a rather inexpensive little instrument, the Angulon f:6.8 made by Jos. Schneider & Co. in Germany. This convertible anastigmat is a universal tool and a gem among wide-angles. It draws out a field of more than 100° and works at the speed of f:6.8, while most other wide-angle lenses on the market have a largest aperture of f:12.5 to f:18. Both elements of the Angulon may be used as separate lenses with one and one-half and twice the focal length of the com-



"Field Building"
Fred G. Korth

bined system. Whoever was heretofore used to carrying along three lenses and whoever tried to focus on his ground glass wide-angle pictures of dim interiors at $f:12.5$ or smaller will understand the progress achieved with the Angulon. Too, most wide-angle systems are made without shutter and for large cameras only, while the Angulon may be had in Compur shutter for speed work and at a focal length of 9 cm. ($3\frac{1}{2}"$) for cameras of $3\frac{1}{4}:4\frac{1}{4}"$, $4:5"$, $9:12$ cm. and $10:15$ cm. size.

The standard focal length for hand cameras varies between the measurement of the longer edge of the film and its diagonal. That would in the case of a $4:5"$ camera be between 5 and $6\frac{1}{2}"$. Any lens shorter than 5" is considered wide-angle. A $3\frac{1}{2}"$ Angulon in addition to being a good wide-angle instrument of unusual speed furnishes its owner with a $7\frac{1}{8}"$ front element at $f:11$ for portraits and a $5\frac{1}{2}"$ rear element at $f:8$ for landscapes. Stopped down both halves are advantageous for architectural and still life pictures.

The author has taken many more than one thousand negatives with Angulon lenses of 9 cm. and 12 cm. focus and he presents to the readers of CAMERA CRAFT five samples:

"Field Building". Looking up to a modern office structure from a narrow street below. To get the sky on the film as well as some of the lower floors of the building a lens of short focal length is indispensable.



"Chrysanthemum"

Fred G. Korth



"Good Morning"

Fred G. Korth

Any wide-angle would have done the trick. Pictures like this one will serve for a check-up on some of the qualities of a real anastigmat. A ruler laid along the vertical and horizontal lines of windows would reveal any curvatures. Tongue-shaped or cushion-shaped distortions toward the edges of the negatives are comparatively common with faulty optical systems.

"A Good Time in the Office". Who has not heard the old tale about the distortion of human heads with wide-angle lenses? The reader may judge for himself! This shot was actually taken in a small private office that presents other problems than a similar job set up in a roomy studio with the camera 15-30 feet back. Two normal Photoflood lamps and the ordinary office lights were all that was needed. The subjects were posed, but a very short exposure insured life-like expressions. Aside from the wide angle of view it is the depth of focus that suggests the type of lens.

"Good Morning!" This is a new elevator cab in the process of being installed. It is not ready for operation and a scaffold hides it together with a row of others from the eyes of the people constantly passing through the lobby. The scaffolding left only a 30 inch passage for



"A Good Time in the Office"

Fred G. Korth

work with the camera. Two Photoflood lamps are in the elevator. Even with ample space behind the camera the writer would not recommend a longer focus lens in order not to minimize the size of the cab.

"Chrysanthemum." A little yellowish flower picked up in the back-yard, about one inch in diameter. Many an amateur has built extensions to the bellows capacity of his camera for copies of small pictures and for big negatives of minute objects. The facts are, however, that a shorter focus lens—a wide-angle—is even more practical for most of this work. A box-shaped extension to a camera with its straight light reflecting inner walls presents many handicaps, while with a wide-angle lens the ordinary capacity of a double-bed camera is sufficient. A 4:5 camera with 6" lens and 12" bellows permits photographing of flowers and other small objects only up to their natural size. The same camera with a 9 cm. lens can be employed to enlarge the image right away to 2 1/3 diameters. Subsequent enlarging of the picture makes results like this one easy.

"Bottles." This exposure was made with only the front element of the Angulon anastigmat, which gives an even larger focal length than is usually found on hand cameras. A long lens is obviously better suited for this type of photograph, where objects in the background must keep their relation in size to those in front as much as possible. This admittedly softest element of the convertible lens also lends itself well to portraiture.



"Bottles"

Fred G. Korth

Track Meet Opportunities

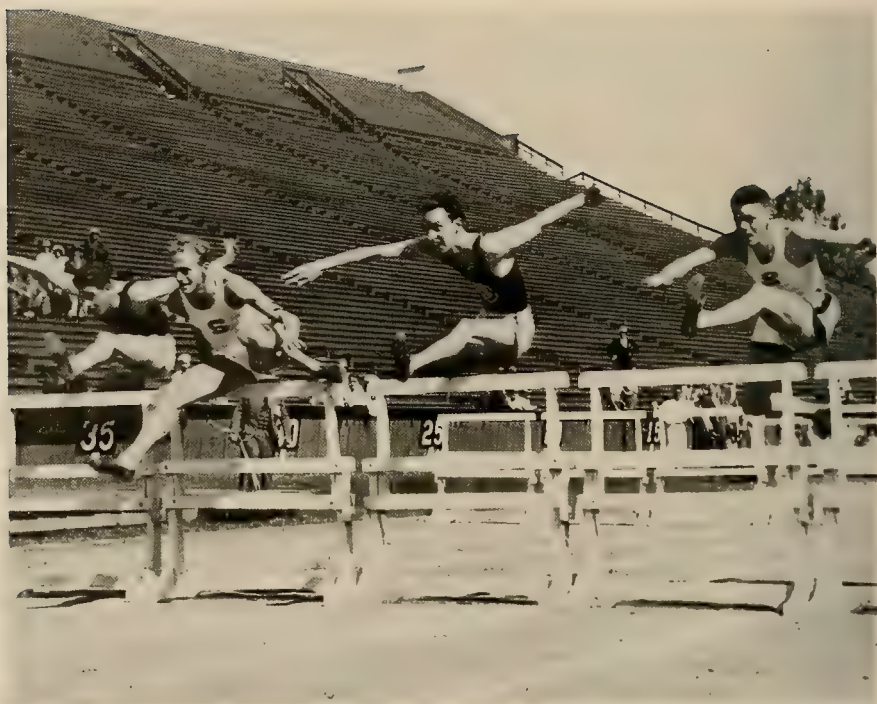
Nestor Barrett

IT IS probable that there is no single event so rich in photographic opportunities and yet so universally overlooked as the university track and field meet. Here is to be found lightning-like speed, thrilling competition and breath-taking finishes. Why such a virgin field has been so long untouched by the novice and his advanced brother, the pictorialist, has always been a source of real mystery to me.

The amateur and his camera also enjoy at the track meet an opportunity which is present at no other sport with which I am acquainted (at least not in so great a degree). That is the unobstructed chance to photograph any and all events with a minimum of interference. Track meets at the leading universities are usually held in their stadiums, structures intended to accommodate from 50,000 people up. A crowd of 5000 is exceptional at even the most highly touted cinder events. Thus almost unlimited room is available in which the photographer may set up his apparatus.

The varied lines of sport found at a meet also lend opportunity for the making of pictures with dramatic and pictorial values. Camera angles of unusual interest and power are readily obtainable. The conventional athletic uniform does little more than supply the demands of modesty and good taste, and thus leaves displayed for the photographer beautiful muscular construction and movement, perfectly controlled and at the peak of form.

Almost any kind of camera can be adapted to the work, but the Graflex and Graphic on account of their high speed shutters, excel in this work. It is best to work at the highest speed that the sunlight and lens aperture will permit. $1/750$ th of a second is not too much with super-sensitive film on a bright day at $f:4.5$. Since most of the work will consist of pictures made of individuals, whose precise position can be known at a particular instant, great depth of focus is not needed. A telephoto lens, if available, should be taken along as there are places where it will come in handy.



"Hurdles"

Nestor Barrett

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex; Bausch & Lomb IC Tessar; $1/440$ sec. at F:4.5, on E.K. par speed film pack in D-72; 3 P.M. bright day in April; print E.K. News Bromide, contrast.

The rich variety of sports which make up the track meet will be almost certain to result in a crop of interesting views. The dashes, hurdles, jumps, pole vault and a dozen other events will add color and thrills to the work.

While the viewpoints to select and the angles to be made use of will probably occur to the photographer after a little thought, the following suggestions in regard to specific events may be found helpful. They are the result of several years experience in covering some of the biggest meets on the Pacific coast.

Dashes: This heading is generally applied to the 100, 220 and 440 yard runs. The comparatively short distances always result in thrilling and spectacular finishes. It is generally best to take a position at the end of a straightaway about ten yards beyond the finish line and to the side of the track. This will allow the lens to take in the full expanse of the tape. This is necessary as there is no telling which lane the winner will be in. The camera should be held at eye height if possible as this gives a better perspective of the finish line. A good sense of timing will have to be developed to get the winner just breaking the tape. Always trip the shutter just a moment before the last stride as the shutter lag



"Broad Jump"

Nestor Barrett

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex; Bausch & Lomb IC Tessar; $1/190$ sec. at F:5.6 on E.K. Superspeed cut film, in D-72; bright day, 3 P.M. in April; print E.K. News Bromide, contrast.

will make you late if you wait until the actual finish.

Runs: All distances of one-half mile and over may properly be called runs as they require a slower tempo and different technique on the part of the runner. A series here will make an interesting addition to the album. This is seldom done, so try it the next time you are out. Take the mile run, for instance. Make a shot of the start and then one as the runners pass the lap posts until the finish. If the race is close and the contestants well grouped you will have as good a selection of sport pictures as anyone could wish.

A discussion of the races brings to mind two other thoughts. The relay is always good for a couple of real action scenes when the baton is changed at the end of the laps. Another interesting viewpoint seldom seen is a good picture of a start. Get down at the beginning of a dash sometime and snap it. You will get a priceless photo showing the muscles in play, straining every ounce of energy to get away first.

The high and low hurdles offer a genuine opportunity to catch real dramatic action. Station yourself at a forty-five degree angle opposite the last hurdle and catch them just as they clear the top. The one ahead at this point is most likely to be the winner. Sometimes a runner will



"Pole Vault"

Nestor Barrett

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex; Bausch & Lomb IC Tessar; exposure at F:6.3 on E.K. Super-speed film, at 3 o'clock bright day in April; negative developer D-72; print on E.K. News Bromide, contrast.

trip over this last hurdle giving you a chance for a priceless shot of a spill.

Beware of the high jump. The obvious thing to do is to stand behind the standards and get them just as they go over the bar. The trouble is that the manner of making the jump interferes. The jumpers sort of roll over, rather than jump. If you wait until they are clear all you will get is a picture of a back. Shoot this just before the bar is cleared and all is well.

Broad Jump: If you have access to the field try one of this head on from the end of the pit. You must be just right or you will be out of focus.

The pole vault will give you a chance to work in some of those cloud negatives. Do not fire until the bar is cleared or film will be wasted. A pole vault picture is not much good if the bar is coming down with the man.

Discus: I tried for years to get a perfect shot of a discus thrower in action, and regret to say I really never succeeded. There is only a split second when he is turning that can be used. Try and try again is the only advice I know of.

The javelin, shot put and hammer throw offer little except the con-

ventional viewpoints. They are worth trying and a little ingenuity might result in something really fine.

Since most of the pictures taken will be made at high shutter speeds it is well to develop the film for the maximum density possible. It will tend to be thin but if properly exposed will be printable. Any good standard developer will do. I personally use D-72, but pyro and others would probably have done the work as well.

The making of pictures at a track meet need not be wholly without profit to the alert amateur. For some reason these events are much neglected by the professional cameraman. Track athletes are just as much interested in seeing themselves in action as are football players. I have often been asked by performers for pictures and they have always offered to pay for the work. There is no reason why the tickets of admission cannot be paid for out of the afternoon's shooting.

Thus we will be wise if we do not forget the track and field meet. There the alert amateur will find much material of a pictorial nature, fraught with dramatic value, while even the lowly record shooter will be able to make an interesting and lasting record of the great figures in the world of sport.

The Un-Photographic P h o t o g r a p h

Haden Hankins

NOW and then in any photographic group, someone will present a print which resembles nothing so little as it does a photograph.

The layman will exclaim: "Wonderful, it doesn't look like a photograph at all." The purist will damn it as an abortion and an abomination, and the apostle of artistic freedom will maintain that, regardless of its resemblance to any other medium, its true importance depends solely upon its intrinsic value as a picture. Forthwith there blossoms that hardy perennial, a debate on straight versus controlled photography.

The layman, as a rule, has seen hundreds of snapshots, and a multitude of purely utilitarian photographs. He has heard "critics" hold forth upon the artistic worthlessness of the photographic print, or felt in their occasional approval a certain condescending tolerance. He looks upon the camera, therefore, as a very ingenious machine, the chief purpose of which is the recording of Aunt Matilda's visit, or the demonstration of the rejuvenating effect of using Youthbloom Soap. With this attitude of mind he is astonished and delighted when shown a print which, al-

though seeming to be either a charcoal drawing, or an etching, or a lithograph, still has been produced by that plebeian instrument, the camera.

The purist looks upon the camera as an artistic tool which is separate, distinct, and wholly independent of the more ancient forms of graphic art. He knows that the photographic process, pure and undefiled, is capable of very lovely and beautiful results, and he feels that the unique quality of the straight photographic print is of great esthetic value. He is, therefore, hurt and outraged when told that the picture which he is viewing is not a cross between a mezzotint and a soft ground etching, but is a specimen of photographic art.

The believer in freedom, chafed by the yoke of established principles and precepts, relegates to oblivion all consideration of the print's apparent or concealed parentage, and with enviable detachment concerns himself solely with the esthetic values involved. He is impatient with the critic who protests that the alleged photograph appears most unphotographic, and stoutly maintains that resemblance to medium is of no importance whatever in the evaluation of any example of graphic art.

This question has, no doubt, agitated camera workers ever since the early days when photography first fell victim to artistic aspirations. And it will probably continue to do so as long as pictorialists struggle in the gloom of the darkroom, striving to produce the great photographic masterpiece. In entering the discussion the writer does not hope to solve the riddle or to bring order out of the chaos of endless argument. Yet it is hard to overlook the fact that so much of the debate concerns the propriety or impropriety of the controlled print as such. The writer believes that in any work of art the details of production are only important as a means to an end, or, as one very great artist has said: "It doesn't make any difference how you get your results so long as you get them." Therefore, we are concerned here not with how a print was made, but rather with what it looks like when it is made. It matters little whether the worker confines himself to the unmanipulated negative and print, or involves himself in the intricacies of gum or glue, oil or carbon. The finished picture, and we always fondly hope it will be a picture, is the only thing we can legitimately criticise.

In every art there are many modifications of method and variations of process. These have not been developed as a means of overcoming deficiencies in the basic process, but as a means of securing subtle differences of feeling in the finished work. In etching, for instance, there is the bitten line, dry point, soft ground and mezzotint. The etcher uses one or the other of these not because he finds any lack of esthetic possibility in the others, but because he thinks the selected medium will best express the idea and feeling he has for his subject.

Likewise in artistic photography the many control processes are the result of the pictorialist's desire for some slight modification in the superficial and surface characteristics of his medium. Used for this purpose by a sympathetic and understanding worker they are of infinite value and even the most dogmatic purist must admit that by their aid prints of great beauty have been produced. But when pseudo-lithographs and



"Early Morning"

Floyd A. Sears, A.R.P.S.

wash drawings result from their use, that is another matter. Here their virtue has been perverted to the production of something that is another "fish, fowl, nor good red herring." We look at the print and we think: "Now that looks like a charcoal drawing, but what kind of a charcoal drawing is it?" And finally, since it is hung in a photographic exhibition, we conclude that it must be a photograph, but still we are not sure, and so, in our dilemma the whole emotional appeal of the print is lost and it fails, therefore, as a work of art.

Theoretically, of course, a pictorial photograph does not depend for success upon the possession of photographic characteristics. When a print is criticised for its lack of photographic quality the liberalist quite properly says, "What of it, are we not concerned solely with its worth as a picture?" Which is a very just question, but with the unfortunate implication that regardless of how the unique virtues of the medium have been squandered, the print may still be equal to straight work in whatever medium the opus may resemble. For several reasons this is a most erroneous assumption. First, purity is essential to the best art. This does not mean the purity of the photographic purist, who believes in strict adherence to some specific procedure or prescribed technique, but rather to purity of thought or idea in the esthetic conception and arrangement of the picture; to purity of expression—the purity that produces in the observer a single, simple response, undiluted by conflicting ideas and emotions.

This essential property is lost by the photographer whose work shows to any noticeable degree the quality of any other medium than photography. His work is a sort of hybrid, a concoction which, while possessing the feeling of several media, exhibits the best qualities of none. Confronted with such a print the observer will just as surely be confused as if the photographer had allowed himself to fall into the error of conflicting compositional elements.

Secondly, the un-photographic photograph is produced by a more or less complicated process involving the use of cameras, films and paper, or enlarged negatives, gum, oil, or what have you, while the etcher, the lithographer, the draughtsman, or the worker in whatever form of art the unfortunate print may resemble approaches his problem directly with the simplest technique consistent with his medium. When the photographer, using methods alien to all media but photography, abandons the characteristic and distinguishing quality of his medium, it seems highly improbable that his efforts will even approximate the best examples of the more manual forms of art. No matter how strongly a paper negative print may resemble a charcoal drawing still some vestige of its photographic origin will remain and so we have something that is neither a good drawing nor a good photograph.

So far as can be discovered by a close scrutiny of the authorities it seems that photography's chief claim to a place in the temple of the arts rests upon its unrivaled ability to render infinitely subtle gradations of tone—exquisitely fine transitions of light and shade. To jettison this characteristic for the bolder effects of some of the more ancient monochrome arts is to reduce the camera to a mere draughting tool, to make it simply an instrument with which to overcome an inability to draw. Of course there are men who possess the artistic impulse, men with esthetic qualities of mind which demand expression in graphic form, but who lack that fine co-ordination of eye and muscle which makes possible the expert draughtsman. Photography is a god-send to such men as a means of rendering their visions in concrete form. But they must find delight in the unique character of the photographic print and strive to preserve this individual quality in all of their work. Otherwise they run the risk of producing photographs which are not photographs. These are never, except in rare cases, good art. The person, therefore, who is lacking in an appreciation of photographic quality and tones had best find an outlet for his artistic emotions in some other medium.

Nothing in all this should be construed as an indictment or criticism of the many control methods available to the pictorial photographer. As variations of the basic process, as a means of securing a slight variety of rendering in the final result, or even in some cases of overcoming inherent limitations, they are of undeniable value. Only the final result is questioned. The worker who leaves the comparatively straight path of the simple negative and print is to be admired for his courage, but if thereby he abandons the vital quality of his medium and produces a conglomeration of several media, then his courageous effort has been in vain.

Photographing The President

William Edwin Booth

ON the occasion of a recent trip of Franklin D. Roosevelt to the restored town of Williamsburg, Virginia, I as an amateur, had the unexpected opportunity of photographing our President. Perhaps you already know that President Roosevelt is especially well guarded on these trips. Appearing, as he does, before large throngs and riding in an open limousine along crowded streets, it is comparatively easy for an assassin to make an attempt on his life. This was demonstrated in Florida where the then Mayor of Chicago "Cermack" was fatally wounded by shots intended for the President.

People with cameras are warned by the military guards along the route the Presidential car travels not under any circumstance to take pictures, not that there is any harm in photographing the President, but because it is easy for a designing person to conceal a weapon in a faked camera and fire a mortal shot.

I made the trip to Williamsburg, on the day Mr. Roosevelt's special train was expected, and arrived shortly before he did. Alighting to the platform, I saw the military units lined up in readiness and the cannon that were waiting to give the 21 gun salute to the President. Then a voice—"Hello, there, going to photograph the President?" This was a newspaper photographer who was a friend of mine. I told him that I had come down with my camera to photograph the historic old Colonial town of Williamsburg.

"Why don't you stick around and get a picture of the President, he'll be here in a few minutes?" he asked.

"But will they let me?" I countered.

"Sure, you have your camera and case, just act as if you were a newspaper photographer."



"Franklin D. Roosevelt"

Wm. Edwin Booth

So I opened my trusty 9x12 camera and with the case swung over my shoulder sauntered around among the news men. Most of the cameras were Speed Graphics, which seems to be the news photographers preference, however I also saw a Graflex and several 9x12 cm. cameras like the average amateur uses.

In a few minutes the President's train puffed into the station and came to a stop. Instantly cameras flew to eye level and their working parts tested. No one appeared. The military guard had cleared the station and street for two blocks. The President's car drew up and parked. Government men slipped off of the train and sauntered around through the station. A steel inclined platform was put into place against the top step of the private car.

Every news man was seeking a point of vantage to snap a picture. I had wondered about focus, and I noticed that the other photographers seemed to focus on the side of the train and then stop the diaphragm down, set the shutter and insert a plate. Here were news men that *had* to bring back a picture setting their cameras and they had not seen the man they were to photograph yet! I followed their example saying to myself, "this must be right or they would not do it." Then a figure appeared on the platform—"click"—it was the Postmaster General, then two senators, each man walking down the inclined platform. I had an exposure of each on my film pack which was never removed to refocus during the stay at the station. A plain clothes man next appeared, and then the President of the United States. He smiled and waved, cameras clicked. He descended and stood by his car and the first "Boom" of the Presidential salute sounded. Soldiers saluted, news men and Government men doffed their hats as did President Roosevelt. Here was a chance for a picture with drama, patriotism, and pictorial interest combined, so as my hat tumbled unnoticed to the ground, I raised my camera to eye level and pressed the cable release.

I brought home a negative subsequently enlarged about $7\frac{1}{2}$ times, with everything in sharp focus. The shutter speed was 1/50 second, diaphragm f.16 and film pack of the "Chrome" type.

There are some amateur photographers who discredit the news photographer because his pictures are often lacking in composition, tonal values and what not. I venture to say that if these same people were to attempt pictures under the circumstances the news man encounters daily, that in all probability they would not do better, and the chances are they would come back without anything to show for their trouble. I fully expected to find that I either had an out of focus negative or a blank one. I was agreeably surprised to see a picture even as good as the one shown here, which I will treasure all the more as numerous people have requested duplicates of it for themselves, and because Mr. Roosevelt has autographed a print especially for me.

Cinema Section

Edited by

William A. Palmer

Editing Technique

EDITING is one of the three important phases of motion picture production along with photography and projection. Yet many makers of personal movies ignore this in-between operation that all professional films must undergo and show their movies in the raw just as they come from the processing station on hundred foot reels. Editing of some sort is absolutely necessary for any and all motion pictures, whether they be simple home records or dramatic films in photoplay form. No cinematographer is good enough to be able to shoot a roll of film with each scene in exactly the right order and cut to the right length. Editing some home films may not be more complex than joining four hundred foot rolls on one projection reel and deleting a poor scene or so, but usually the film will be improved a great deal by more careful editing.

There has been evolved through years of practice by professionals and careful amateurs, a more or less standardized editing technique which enables the film to have a thorough overhaul without causing confusion or excessive work. In some cases a film needs relatively little revision from its photographed state and then the editing can be done "on the rewinds" by rolling the film back and forth, picking out this scene, cutting that camera jiggle, etc. Usually, though, it is a saving of time, energy, and an insurance of a better film to decide at the outset that a film needs a *full* editing job and then to go ahead with the standard editing procedure as outlined below.

The Tools

Like any job of a mechanical-technical nature, film editing becomes much easier and more precise when the proper tools are used. While editing may be accomplished with the aid of nothing more than a projector and splicer, a properly equipped editing table is recommended. The following apparatus is needed:

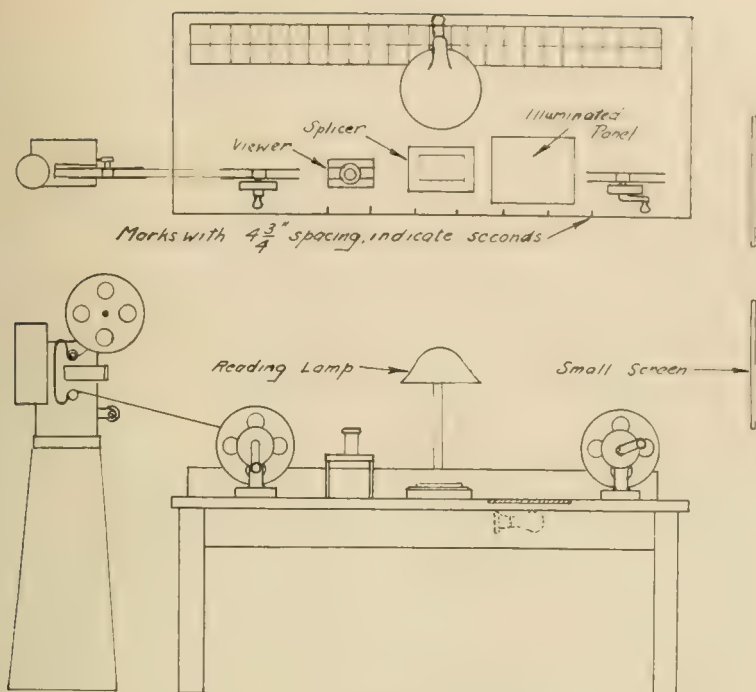


Fig. 1

Pair of rewinds (2 geared heads so, that film may be rolled either way, are preferable but 1 geared head and a "dummy" will serve.)

Splicer, film cement.

Reading lamp to illuminate field of operation.

Numbered film compartments for storing short lengths of film. (Egg boxes, holes bored in wood, etc.)

Wooden spool for winding up short lengths of film. (Described later.)

Projector & screen.

Having gathered together the tools, one should set them up in an arrangement similar to that shown in figure 1. The table should be a height comfortable for writing as, indeed, a desk serves admirably. We recommend, however, that the desk or table be one that can be devoted to film editing exclusively so that the rewinds, splicer, and film compartment boxes can be fastened to it and thus relieve one from the annoyance of sliding. The projector is placed to the left as shown, either on a separate stand or on the table itself, if there is room. The film sprockets of the projector should be lined up with the rewinds so that the film can be threaded through the projector and taken up on a reel placed on one of the rewinds.

The rewinds, if both are geared heads, are placed as shown. If there is only one geared head and a "dummy" or plain spindle, the geared head should

be placed to the right. The splicer should be placed in the center between the rewinds. To the right of the center, between the splicer and the right rewind, should be placed a means of viewing the film as it is wound onto the right hand rewind. This viewing means can take several forms. The simplest is a white card thumb-tacked to the table so as to reflect light from the reading lamp. If one wishes to put more work into the editing table, he can arrange a square of opal glass in the table surface, illuminated by an electric lamp underneath. If one has a film viewing device, it should be mounted to the left of the splicer. These viewing devices are very convenient for inspecting the details of single frames, but they do not eliminate the need for taking in a view of several frames or a whole scene when determining the proper point for a cut. Lacking a film viewer, one should have a hand magnifying lens. A jeweler's glass is ideal, but the regular lens of the projector will serve almost as well.

Along the edge of the table between the rewinds, there should be placed several marks with $4\frac{3}{4}$ inch spacing. This distance represents one second of screen action on 16mm film (16 frames.) Mark the spaces from right to left "1 sec., 2 sec.", and so on. One can readily measure the length of the scenes by the use of these marks in the manner of a sales person measuring dry goods. (For 8 mm film the marks should be just half the distance apart or $2\frac{3}{8}$ inches.)

The numbered film compartments are placed at the back of the table within a convenient reach and a screen set up to the right of the table. The screen can be the regular one moved up close so that a small brilliant picture will be projected which can be seen easily without darkening the room. If one cares to, he may make a small editing screen of white cardboard, blotting paper or other material.

The one remaining piece of equipment is a wooden spool to wind the individual scenes up in small rolls so they may be filed in the compartments. This is an ordinary empty thread spool with the flange of one side removed. You will find that the hole will fit a round rewind spindle just right and a little whittling with a penknife will make the hole square to fit a square spindle. In use the film is wound around the spool snugly for a turn or two when the friction of the film on the spool will hold it. The length of film can then be wound up, using the thumb and fore finger of the left hand to guide it while turning the rewind with the right. The film can then be slipped off the spool and placed in the proper compartment.

Procedure

Now for the editing procedure. We will assume that a number of 100 foot rolls have been returned from the processing station and have been screened for a preliminary view. The rolls are rewound and threaded into the projector again, but this time instead of the film being threaded onto the take up reel on the projector, it is wound onto an empty reel on the left rewind. The projector is operated with the left hand on the switch so that it may be stopped at any moment while the right hand turns the rewind taking up the film. Paper is prepared with three headings for scene number, description, and comments. The film is then projected, stopping the projector after every scene and writing down the scenes numbered as they come on the reel

and jotting down a brief description along with comments such as "over exposed" "close-up" "pan left to right" and similar details that will bring to mind the scenes appearance when one reads the description later.

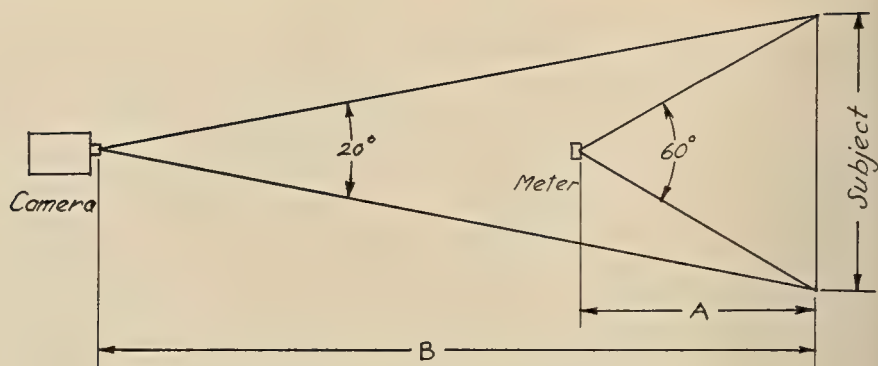
As each scene is projected and the projector stopped just at the start of the next scene has reached the lower projector sprocket, the scene is cut from the roll and wound on the wooden spool from the empty reel, then placed in the properly numbered compartment. This is done with *every* scene, unless it is definitely known that two scenes are already together in the right order and exactly the right length. This is not often the case, however, for almost always the camera is allowed to run just a little longer than it needs to or there is a little jiggle as the starting button was released. Such slight imperfections are apt to be left in because one does care to bother about another splice, but it is poor practice. A well made splice is justified any time if it removes a blemish.

Now having identified and filed all the scenes, the picture is edited on paper by referring to the scene descriptions and then marking down the suggested order for the scenes in the finished job. In this way, one can study the picture, make alterations and changes freely without any handling of the film until it seems that there has been evolved a good sequence for the first cut. Any titles that are needed are now written and made before the editing process continues.

The picture is then assembled, following the new sequence of scene numbers as worked out on paper. Each scene is joined in proper order "heads in" on a reel on the right rewind. (To those who are new to film handling it is convenient to remember that, since the images on movie film are upside down on the film as it is run through the projector, the head or start of a scene is shown by the heads of any people in the scene. In other words the top of the frame is toward the start of the scene). When all scenes have been spliced in the order desired, the reel is rewound and screened. Faults are noted such as length of scenes, flashes or light streaks, etc., and corrections made. The film is screened again for critical analysis and more faults corrected. This continues until the film reaches its completed form.

Photoelectric Exposure Meters And Movies

RECENTLY there has come to our attention some criticism of photoelectric exposure meters. Workers have sent us scenes obviously incorrectly exposed with the statement that a photoelectric exposure meter was used and asking why the meter did not read correctly. In every case it has been found that the meter was not at fault but was used incorrectly.



Distance "A" should be $\frac{1}{3}$ of "B"

Fig. 2

The most prevalent misuse of the meters is found to result from taking the reading too far away from the subject. When this is done, the meter takes in much more area than the camera lens, and unless that area outside of the camera field has the same level of illumination of the area within, the exposure indication will be incorrect. This situation is common because the usual photoelectric exposure meter includes a *much wider* field than the moving picture camera. Shown graphically in figure 2, the exposure meter includes an angle of approximately 60 degrees. (Weston meters are 60 degrees, other makes are about the same or have a smaller angle.) The movie camera on the other hand includes an angle of 20 degrees. (Regular 1 inch lens for 16 mm., 12.5 mm. for 8 mm. film.) Therefore in order that the exposure meter and the movie camera include the same area, *it is necessary for the meter reading to be taken from a distance which is one third of that between the camera and the subject.* Thus the meter should not be used from the camera position unless all the area, around that to be included by the camera lens, is illuminated to the same level as the subject.

Another common misuse of the photoelectric meter is to allow it to include too much sky. When taking a reading on a scene with sky included (the sky being a part of the picture and not the main subject) the meter should be pointed downward about 30 degrees. *This is particularly important when taking readings for Kodachrome film.* Color exposure should be determined from a reading made close to the subject and not including any sky, even though a great deal of sky is to be included in the scene.

Correction

In the questions and answers of the January issue we stated that there was no projector made to take both 8mm and 16mm film. We learn, however, from a reader in Mexico that a new Model of the Bolex, made in England, is able to project both sizes of film. The projector is not being imported to this country as far as we know.

Monthly Competition

CONTRIBUTORS PLEASE NOTE

On March 1st, 1936 we are moving into new and larger quarters. In the future please address all contributions to the Camera Craft Monthly Competitions to:

Camera Craft Publishing Company
425 Bush St. San Francisco, Calif.

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: Don Wallace and Gunnar H. Kampe, for the Fort Dearborn Camera Club; Fletcher O. Gould, for the Pack Rats; John Muller for the Pictorial Photographers of America; and Fred M. Doudna, for the Washington Pictorialists.

The following won points for their clubs in the Amateur Class: Leonard H. Cooper, for the Calgary Camera Club; and John Gutmann, for the California Camera Club.

Contributing Clubs

Amherst Camera Club (Mass.)	Montreal Camera Club
Arizona Pictorialists (Prescott, Ariz.)	Niagara Falls Camera Club (N. Y.)
Boulder Lens Club (Colo.)	Norfolk Camera Club (Va.)
Buffalo Camera Club	Oak Park Camera Club (Chicago)
Calgary Y Camera Club (Canada)	Omaha Camera Club (Nebr.)
California Camera Club (San Francisco)	Orange Co. Camera Club (Huntington Beach, Calif.)
Camera Club of Long Beach (Calif.)	The Pack Rats (Pasadena, Calif.)
Concord Camera Club (N. H.)	Peoria Photo Forum (Ill.)
East Bay Camera Club (Oakland, Calif.)	Photographic Guild of Philadelphia
Ellensburg Photographic Club (Wash.)	Photographic Society of San Francisco.
El Paso Camera Club (Texas)	Pictorial Photographers of America
Fort Dearborn Camera Club	Pictorial Photographers of Victoria (Canada)
Photon Camera Club of Champaign (Ill.)	Redlands Photo Fictorialists (Calif.)
Golden Gate Miniature Camera Club (San Francisco)	San Jose Camera Club (Calif.)
Hamilton Camera Club (Canada)	Solano Camera Club (Fairfield, Calif.)
Hartford County Camera Club (Conn.)	Syracuse Y.M.C.A. Camera Club
Houston Camera Club (Texas)	Washington (D.C.) Pictorialists
Japanese Camera Club (San Francisco)	Westchester Camera Club (N. Y.)
The Kamerakranks of Northern Calif.	Whittier Camera Club (Calif.)
Miniature Camera Club of New York	
Miniature Camera Club of Oakland, (Calif.)	

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club.....	5
Photographic Society of San Francisco..	5
Pictorial Photographers of America.....	4

Small Clubs Advanced Class

The Pack Rats.....	12
Whittier Camera Club.....	3
Washington Pictorialists.....	2

Large Clubs Amateur Class

Golden Gate Miniature Camera Club.....	10
California Camera Club.....	4
Miniature Camera Club of Oakland.....	1

Small Clubs Amateur Class

Washington Pictorialists.....	4
Camera Club of Long Beach.....	3
Calgary "Y" Camera Club.....	2
Omaha Camera Club.....	2



"Boulder Dam"

Fletcher O. Gould

Advanced Medal Print

■ The tremendous effectiveness of this picture is so obvious that words calling attention to its merits are entirely superfluous. Mr. Gould has recorded here a full measure of Man's greatness as a builder. A grand theme grandly treated. What more is there to say?

Data: 4x5" Speed Graphic; 5¼" Carl Zeiss; 1/65th sec.; at F:22, on E. K. S. S. Pan., no filter; Defender Velour Black I; toned in "Barstone." 11x14" prints on 14x18" mounts may be obtained at the price of \$10.00 on application to Camera Craft.

Second Award

Advanced Class

■ In days gone by the advanced amateur photographer was prone to speak rather condescendingly of those who had made photography their life work. Terms such as "bread and butter portrait" or "commercial photograph" were commonly applied to practically all professional work, and were accompanied by a politely snobbish curl of the lip. It was felt, and rightly so, that professional photography was uninspired, humdrum, and completely without artistic significance.

That such an attitude is no longer justified should be evident to all. The present dominance of photography in the field of commercial illustration has brought dignity and high financial rewards to the profession, with the result that the most talented amateurs have been encouraged to take up professional work. We do not hesitate to say that a great part of the finest artistic photography of today is the work of professionals. These men are contributing an imaginative quality, a freshness of viewpoint, and a mastery of technique that is matched by very few

(Continued on Page 143)



"Vigor"

Don Wallace

Third Award

Advanced Class



"Edge of the Ice"

John Muller

■ Mr. Muller's "The Edge of the Ice" has an originality of conception, arrangement, and subject matter that combine to make it a most interesting picture. The position in the composition and the brilliant one of the two swans make them the dominant interest. Observe how strongly the eye is pulled through the picture toward these two birds in the upper left, and how nicely the shadow in the upper left corner checks this directional thrust so that the eye remains within the boundaries of the picture. We consider this an excellent thing

and believe that Mr. Muller has made the most of his opportunity, but were it within the power of the photographer to have everything just as he wished we would make no adjustments. We would have the uppermost swan appear in a position similar to the other one, for as things are, this bird is shown in an awkward and unrecognizable position. Also we would have the shadows in the upper right much more massive in character so that they would fill in that area with fairly dark tone and thus keep the eye confined to the actively interesting parts of the picture. There are other interesting aspects for discussion had we the space. For instance, consider the possibilities of the picture if the two swans did not appear at all.

Data: 4x5" Graflex; Zeiss Tessar F:4.5; 1/50th sec. at F:8, on Defender X F Pan., in D-61A; K-2 filter; Defender Velour Black J, in D-72. 11x14" prints on 14x18" mounts are obtainable at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Fourth Award
Advanced Class



"Bill"

F. M. Doudna

approach in which he tries to bring out the spirit behind the face. It seems to us that slight softening of the focus helps him to do that. The more objective approach would demand sharp focus because then the photographer would be trying to show the effect of the years in moulding this face. Lines and textures would become most important then, and consequently would have to be carefully delineated. We say then that definition is a problem which must be solved afresh for each picture, the decision depending upon the subject matter and what the photographer is trying to do with it. To those who feel that such a position is vague or lacking in concreteness we can only reply that the only artistic opinions that will ultimately be worth a damn to you are your own opinions. As a great artist once said: "Art can be learned but not taught."

Data: 20" Verito; Cramer Highspeed plate, in Pyro-Metol; E. K. bromide print in M. Q., gold toned. Not for sale. No exchanges.

Fifth Award

Advanced Class

■ There is a delightful delicacy of tone and texture in this picture that is augmented by the beautiful flowing movement in the shadow-streaked sand. We like the arrangement except for the fact that the background in the upper left becomes rather busy and consequently is slightly distracting. We can see no reason why one should not trim about an inch from the top on the 11x14" print thus simplifying this area by elimination. Because virtually all the rest of the picture is in sharp focus, we would like to see the branches in the lower left better defined, for we feel that they would then be more in keeping with the delicate textural quality of the whole.

Data: 1/100 sec. at F:8, on S.S.Pan., in D-76; K-2 filter; bright day at 4 p. m.



"Dunes"

Gunnar H. Kampe

CAMERA CRAFT



"Slumber Time"

William Cline

Amateur Medal Print

■ A most attractive little subject nicely photographed. One sees quite a large number of pictures such as this but very few successful ones. Quite often the fault lies in selecting the wrong camera angle. If the camera is too low the vertical area of the bed is sharply diminished and the bed covers in the foreground assume undue prominence. With too high a camera angle we obtain a birds-eye view in the modern manner but this time with subject matter that usually does not fit such treatment. Also in the latter case the picture is likely to lack perspective, appearing to be all on one flat plane. One often sees too great confusion in the bed covering, and still more often finds blocked up highlights in the sheets due to over-exposure or over-development. Mr. Cline has been highly successful in avoiding all these pitfalls. We would like to see just a bit more definite modeling in the flesh areas, especially highlight accents.

Data: $2\frac{1}{4} \times 2\frac{1}{4}$ " Rolleicord; $1/10$ th sec. at F:8, on E.K. Panatomic in D-72; by one photoflood 4 ft. from subject; print on Defender paper in D-72, through Mortensen Texture Matrix. 8x10" prints on 14x18" mounts may be obtained at the price of \$8.00 on application to **Camera Craft**.

Second Award
Amateur Class



"Two Indians"

J. Gutmann

■ In order to fully appreciate Mr. Gutmann's work one should see more of the series of things which he has done in the same vein as this picture. They are all, apparently, candid camera shots, all close-ups of heads, and all distinctly original and striking in their arrangement. His effort is directed primarily, it appears, to bringing out the racial characteristics of his subjects, and we are inclined to feel that he has been quite successful in this regard. To many this will appear to be the most significant picture in the amateur group, and we hope to be able to show more of Mr. Gutmann's work in the future.

Data: $2\frac{1}{4} \times 2\frac{1}{4}$ " Rolleiflex; 1/10th sec. at F:16; E.K. Panatomic in D-76, with yellow filter; print on Defender Velour Black glossy. 8x10" prints on 14x18" mounts may be obtained at the price of \$5.00 upon application to **Camera Craft**. No exchanges.

Third Award

Amateur Class

■ Here is another fine candid camera shot of a most interesting head, caught just right. We feel that the arrangement is a bit too mechanical in this case. Observe that the picture space is divided simply into two rectangles. The rectangle formed by the subject matter, and a smaller rectangle formed by the background area. One of the difficulties, of course, in candid shooting is that one cannot arrange his subjects just as he would like to, but that fact cannot excuse bad arrangements in the final picture.

If the arm could only have cut into the background area at the lower right, that would have served to break up the present stiff rectangular arrangement, and also would have helped by supplying a broader base in support of the head.

Data: Zeiss Contax; Sonnar F:1.5, 5 cm. lens; 1/100th sec. at F:5.6, with K-2 filter, bright sunlight, 3 P.M. in August; E. K. Super X, in P-Diamine; Defender Velour Black S, in Defender Portrait developer; candid "grab" shot; corners dodged in slightly. 8x10" prints on 14x17" mounts may be obtained at the price of \$5.00 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.



"The Critic"

R. Wyrley Birch

Fourth Award
Amateur Class

■ Nice texture and expression combine to give this picture an irresistible appeal to anyone with a fondness for dogs. One feels that it would be great fun to get a hold of that super-abundance of jowl and ruffle this fellow out of his day-dream. A point that must be watched in all three-quarter face portraiture is the position of the eye farthest removed from the camera. It must be either definitely in or out of the picture, and it should not appear as part of the outline. The eye is such an important part of the face that it must either be definitely not shown or given its due share of prominence. In this case the farthest eye is not shown but it comes so very close to being shown that the observer is tempted to look for it. Consequently we feel that the slight confusion caused by this condition could be eliminated by turning the head just a little more in profile.

Data: 4x5" Thornton Pickard; Beck Symmetrical lens; 1/45th sec. at F:8, on E. K. Royal Plate; Bright sunlight, noon, in July; E.K. Vitava G, in D-64; considerable local printing. 8x10" prints on 14x18" mounts may be obtained at the price of \$4.00 on application to **Camera Craft**.



"The Bull Pup"

L. H. Cooper

Fifth Award
Amateur Class



"The Plot"

M. H. Deshler

■ We have seldom seen a table-top picture with an elaborate setting such as this has, worked out with such skill. Except for the small figure one might almost imagine that the picture had been made from real life. The composition is excellent except possibly for the rather even horizontal spacing of the three principal elements; the small figure, the light, and the large figure. This it seems could be corrected by moving the large figure a bit further into the picture.

It must be admitted that when one attempts to simulate real life with a table-top shot he is getting into the realm of fantasy, for the table-top shot can never carry conviction. It is not difficult to argue, with much show of reason, that the field of fantasy is not properly the province of photography, but to be honest we are getting a bit fed up with arguments on the legitimacy of photography in this or that field. In a more serious moment we may

wish to retract the following statement but right now we must get it off our chest. If the amateur derives real pleasure from making a particular kind of picture let him go ahead and make them, and say "to hell with the critics". After all one is an amateur photographer primarily for the fun one gets out of it. Surely it must have been

(Continued on Page 143)

SUMMARY OF COMPETITION RULES

1. Open to all, amateur or professional, club member or non-club member.
2. Closing date 4th of each month.
3. Place technical data, club membership if any, selling price, and whether or not you wish to exchange on back of print.
4. No entry fees or blanks required.
5. Stamps must be enclosed for return of prints.
6. Full explanation will be sent free on request or may be seen on Page 46 of Jan. 1936 issue.

Contributors Please Note

As will be observed the number of contributors to these competitions has grown to the point where it takes over a full page to list the names even in the small type we use for that purpose. Feeling that this space might well be put to better use we propose to discontinue the listing of names beginning with our next issue, unless the protest to our doing so is both positive and numerous. The principal function of the list of names has been to acknowledge the receipt of prints. In the future receipts of prints will be acknowledged by postcard on the 5th of each month. Non-receipt of a postcard will indicate that your prints have not reached us or arrived too late to be included in the judging for that month.

Advanced Competitors

Edward Alenius, A.R.P.S., Jamaica, N. Y.
 Jack Arnold, East London, S. Africa
 Axel Bahnsen, Yellow Springs, Ohio
 H. C. Benedict, Berkeley, Calif.
 E. W. Blew, Whittier, Calif.
 W. H. Boyes, Montreal, Canada
 P. J. Croft, Montreal, Canada
 Fred E. Crum, Spring Valley, N. Y.
 M. K. Curtis, Oakland, Calif.
 A. B. De La Vergne, Denver, Colorado
 *Fred M. Doudna, Washington, D. C.
 Christine B. Fletcher, San Francisco, Calif.
 Ellis W. Foote, Pasadena, Calif.
 W. Richard Gildard, Warren, Ohio
 *Fletcher O. Gould, Pasadena, Calif.
 Harry E. Goodwin, Washington, D. C.
 W. P. Grayston, Montreal, Canada
 Samuel Grierson, Brooklyn, N. Y.
 Verna Haffer, Tacoma, Wash.
 Frank A. Halliday, Calgary, Canada

William Hart, Pasadena, Calif.
 Guy Jaconelli, Wheaton, Ill.
 Stanley R. Jordan, San Francisco, Calif.
 *Gunnar H. Kampe, Chicago, Ill.
 Kichiji Kojimoto, San Francisco, Calif.
 Fred G. Korth, Chicago, Ill.
 Shavenau Monsen, Pasadena, Calif.
 *John Muller, New York, N. Y.
 George Nakash, Montreal, Canada
 Cyrus S. Perkins, San Diego, Calif.
 Emil Reisman, Aldan, Pa.
 Ralph Rex, St. Louis, Mo.
 Clark H. Rutter, Grove City, Pa.
 Ernest C. Schutte, Hartford, Conn.
 R. Owen Shrader, Pasadena, Calif.
 Frank Stubbart, Saginaw, Mich.
 Gordon M. Tranter, Calgary, Canada
 Paul W. Wall, Chicago, Ill.
 *Don Wallace, Chicago, Ill.
 W. H. Wilcox, Tacoma, Wash.

Amateur Competitors

Anne Atwood, Riverside, Calif.
 L. D. Aydlett, Norfolk, Va.
 Barton Bachmann, Redlands, Calif.
 A. N. Barrach, Hamilton, Canada
 L. L. Bender, Lansdowne, Pa.
 Dwight Bentel, San Jose, Calif.
 Frank A. Benus, Cincinnati, Ohio
 R. B. Bigelow, Ann Arbor, Mich.
 *R. Wyrley Birch, New Rochelle, N. Y.
 Mrs. A. M. Bodington, Prince Albert, Canada
 Carl Brandt, Fairlawn, N. J.
 Howard Branson, Philadelphia, Pa.
 Dr. O. L. Brauer, San Jose, Calif.
 R. L. Bredimus, Des Moines, Iowa
 Alex Browdy, Hollywood, Calif.
 Robert B. Brown, Long Beach, Calif.
 Lester H. Brubaker, San Jose, Calif.
 Roland Calder, Berkeley, Calif.
 Dr. J. W. Calkins, Oakland, Calif.
 Cecil A. Callender, Chicago, Ill.
 J. Owen Campbell, Norfolk, Va.
 Edward Canby, Dayton, Ohio
 Lloyd J. Cartwright, Saginaw, Mich.

L. Charles-Smith, Washington, D. C.
 John H. W. Clarke, Millbrae, Calif.
 *William Cline, Hollywood, Calif.
 R. L. Colby, Victoria, Canada
 R. B. Collier, San Francisco, Calif.
 *Leonard H. Cooper, Calgary, Canada
 Paul Coren, Brooklyn, N. Y.
 William Cottingham, Wichita, Kansas
 Lt. D. C. Cubbison, Jr., Fort Oglethorpe, Ga.
 Edward Y. Cuffe, Los Angeles, Calif.
 Earle Curtis, Beaumont, Calif.
 T. Cuslito, New York, N. Y.
 Charles Davis, Urbana, Ill.
 *Marvin H. Deshler, Phoenix, Ariz.
 Mrs. Irene Draper, Scarsdale, N.Y.
 C. W. Eady, San Francisco, Calif.
 C. R. Edwards, San Pedro, Calif.
 Catherine Ellis, Oakland, Calif.
 E. G. England, Durham, Calif.
 G. H. Ethington, Huntington Beach, Calif.
 S. Fiedler, Peoria, Ill.
 John L. Filson, Oakland, Calif.
 Dr. Maxwell Flanders, Whittier, Calif.

Robert K. Ford, Buffalo, N. Y.
 George Forrester, San Francisco, Calif.
 Mortimer Friedman, New York, N. Y.
 Dr. Max J. Futterman, Bronx, N. Y.
 S. Goldstone, Philadelphia, Pa.
 Curt Gottschalk, Evanston, Ill.
 E. Gould, Montreal, Canada
 John Gutmann, San Francisco, Calif.
 Glenn Hainer, San Francisco, Calif.
 Norman Hall, Whittier, Calif.
 B. R. Hart, San Francisco, Calif.
 J. R. Hawes, San Francisco, Calif.
 Johanna E. Heim, San Francisco, Calif.
 Fred S. Herrington, San Francisco, Calif.
 H. Glenn Hogue, Ellensburg, Wash.
 Carl Holzman, El Paso, Texas
 J. W. Hubbard, Shafter, Calif.
 L. S. James, Boulder, Colo.
 Robert Janssen, New York, N. Y.
 F. J. Jennings, Los Angeles, Calif.
 Miss Belle Johnson, Monroe City, Mo.
 J. Warren Kee, Norfolk, Va.
 Arthur Keen, Calgary, Canada
 Walter H. Kenneth, Chicago, Ill.
 Herbert Kerkow, New York, N. Y.
 Darrell King, Celina Ohio
 Kenneth H. Kinsman, Victoria, Canada
 Edward Kitch, Fort Wayne, Ind.
 K. G. Lagerlof, Philadelphia, Pa.
 S. Lakshminarasu, Bangalore City, India
 W. O. Leddell, El Paso, Texas
 Cyrus H. LeBrogne, W. Los Angeles, Calif.
 C. Stanton Loeber, San Francisco, Calif.
 A. H. Lomax, Hamilton, Canada
 Eldredge Looney, Omaha, Nebr.
 Louis Luh, Washington, D. C.
 Alexander Malcolm, Elmhurst, N. Y.
 J. Marshall, Oakland, Calif.
 F. Morrill Martin, Everett, Wash.
 R. H. McCullough, Long Beach, Calif.
 Earle McCutchan, Long Beach, Calif.
 E. M. Merritt, Fairfield, Calif.
 Norman Merz, Detroit, Mich.
 Warren T. Mithoff, El Paso, Texas
 Paula Morse, New York, N. Y.
 Donald B. Myers, Brooklyn, N. Y.
 Miss E. J. Norton, Manchester, Conn.
 William A. Oberlin, Ventura, Calif.
 Victor Overman, Omaha, Nebr.
 John Stone Pany, Berkeley, Calif.
 A. L. Parker, Durham, Calif.
 Eutrope Pellier, San Jose, Calif.
 Paul Peters, Houston, Texas
 Howard R. Porter, Los Gatos, Calif.
 A. W. Prase, St. Louis, Mo.
 Arthur Purdon, San Francisco, Calif.
 Charles C. Putney, Inglewood, Calif.
 A. Albert Reho, Niagara Falls, N. Y.
 Albert I. Rose, Brooklyn, N. Y.
 C. Ross, Calgary, Canada
 J. H. Sammis, Peoria, Ill.
 R. E. Schoenberger, Shaker Heights, Ohio
 George Scott, Jr., Mesa, Arizona
 George Semonsen, San Francisco, Calif.
 Ruth & William Senseney, Barberton, Ohio
 B. H. Shepley, San Gabriel, Calif.
 L. Sheraton, Calgary, Canada
 J. P. Skillen, Hamilton, Canada
 E. F. Sladek, M. D., Traverse City, Mich.
 Carl Thompson Smith, Concord, N. H.
 W. Clifford Smith, Whittier, Calif.
 W. H. Squire, Victoria, Canada
 Jackson Stevens, National City, Calif.
 J. H. Stevenson, Santa Fe, New Mexico
 Arnold V. Stubenrauch, Philadelphia, Pa.
 Allen Sweet, San Francisco, Calif.
 H. M. Takahashi, San Francisco, Calif.
 Henry K. Tanaka, San Francisco, Calif.
 B. A. Timada, Peoria, Ill.
 J. K. Trafton, San Francisco, Calif.
 Dr. Stanley R. Truman, Oakland, Calif.
 John H. Vendell, Amherst, Mass.
 Mrs. F. C. Ward, St. Joseph, Mo.
 Nowell Ward, Chicago, Ill.
 W. S. C. Warner, Moravia, N. Y.
 Ewing Waterhouse, El Paso, Texas
 J. A. Weaver, San Francisco, Calif.
 Samuel Weisain, New York, N. Y.
 Ray G. Wenger, Salt Lake City, Utah
 Morgan W. Wickersham, Washington, D. C.
 Edward C. Widdis, San Francisco, Calif.
 P. Wiechowski, Philadelphia, Pa.
 L. A. Wilke, El Paso, Texas
 Charles Willey, East Patchogue, N. Y.
 Lewis N. Willman, Washington, D. C.
 M. Wilson, Hamilton, Canada
 Edward M. Winfree, Richmond, Va.
 John M. Woodward, Cotati, Calif.
 O. E. Yochem, Long Beach, Calif.
 H. M. Zalmanoff, Syracuse, N. Y.

(Continued from Page 137)

amateurs. Acceptance of this fact has been delayed for a variety of reasons. The professionals' pictures have seldom been sent to salons, and have generally been seen in advertisements surrounded by copy which has worked against their being enjoyed purely as pictures. However, publication of the U. S. Camera 1935 must surely have laid the last lingering doubts. Here the professionals work is shown purely for its picture value, and it cannot be denied that a large percentage of the finest things in the book are to be found in the Professional Illustration section. Mr. Wallace is to be numbered among the group of professionals who are definitely contributing to the advancement of photography, and his picture "Vigor" serves as an example of the sort of work referred to. All this to point out the fact that the amateur photographer stands to profit considerably by a careful study of the best professional work.

Data: 5x7" Commercial Camera; 12" Zeiss Tessar; 1 sec. at F.8, pan film with artificial light; bromide print. 11x14" prints on 16x20" mounts may be obtained at the price of \$10.00 on application to Camera Craft.

(Continued from Page 141)

fun to work out and execute a picture as skillfully as Mr. Deshler has in this case.

Data: Kodak 3A; F:6.3 lens with portrait attachment; Print from two negatives. House and small figure on Portrait Pan., in ABC Pyro; Silhouette on Commercial Ortho in D-72; E.K. Opal H in Amidol; 6½x9" prints on 14x18" mounts may be obtained at the price of \$10.00 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.

Editorial

Our New Address Is 425 Bush Street, San Francisco

The accomplishment of a long standing ambition is pleasant indeed, and it is with that very satisfactory feeling that Camera Craft announces its removal to new and larger quarters at 425 Bush Street, San Francisco. The new premises which encompass about four times the floor space of our present offices will be occupied on March 1, 1936.

To the thousands of new and old readers of Camera Craft, and to the thousands who have enthusiastically purchased our recent book publications, we extend sincere thanks for the support which makes this expansion possible. It is our hope that better accommodations will bring about an increased efficiency that in turn will result in a better magazine, and better books. Come up and see us some time.

Association News

California Photographers to Hold Convention

Beating the National Association to the gun in heralding the return of better times in Photography, the Associated Photographers of the Sacramento San Joaquin Valley are holding a convention in Sacramento, Calif. on April 18th and 19th, 1936. The convention will take place in the Women's Bldg. on the Sacramento State Fair grounds. A fine program is promised and a picture exhibit is scheduled. Rules for entrants are given in the advertising pages of this issue. Photographers throughout the state are urged to attend. Here is a fine chance to get back into the swing of things, to take another step forward toward eliminating the setback to progress occasioned by the depression. The registration fee is but \$2.00. A good time and an instructive one is promised to all. The general chairman is Mr. Fred R. Schneider, 20 No. San Joaquin St., Stockton, Calif. Write him for any further information desired.

National Association Announces 1936 Convention

For the first time since the beginning of the depression the Photographers' Association of America announces to the professional photographers of the United States and Canada a real bang-up convention of the old-time type, old-time,

that is, in every respect except the program which will be as modern as possible.

The entire Convention will be held at the Hotel Stevens, Chicago, Ill., largest hotel in the world, from August 24 to 28, inclusive. There will be a complete and comprehensive exhibit by the manufacturers and dealers, a considerable portion of the floor space having already been sold. Official opening of the manufacturers' exhibit will be on the morning of the 25th. Plans are being laid for one of the largest exhibits of pictures ever shown, eclipsing if possible the enormous showing at the Cedar Point Convention of 1932. In the picture exhibit medals and ribbons will be awarded and seals will be placed on all prints passed by the judges and hung in the exhibit. The exhibit is open to the world, without entrance fee in the United States, and in the near future entry forms will be mailed to every professional photographer in the country. It is expected that there will be a considerable number of entries from foreign countries as well.

Entertainment features already decided upon will include a dance and party by the courtesy of the Chicago photographers, on the night of the 24th, a banquet on the night of the 27th, probably another dance, as well as special entertainment for the ladies. The public will

be invited to view the picture exhibit on the night of the 26th.

The program will be held in the afternoons only, from the 25th to the 28th inclusive, with three portrait features and three commercial features each afternoon, the two divisions meeting in separate halls. The mornings will be left entirely free for the manufacturers' exhibit, except for meetings of the Council. As rapidly as possible the names of demonstrators and speakers will be announced in our forthcoming issues.

Members of the Association are admit-

ted without additional charge to the entire convention, this being one of the services covered by their dues of \$5.00 per year. Non-members who wish to attend the convention, including all features, may do so upon payment of a \$2.00 registration fee. Photographers who wish to view the picture exhibit and see the manufacturers' exhibit, without attending the lectures and demonstrations, will be admitted without charge.

For additional information, write to the Executive Manager, P.A. of A., 501 Caxton Bldg., Cleveland, Ohio.

Club Notes

Forthcoming Exhibitions

Victorian Salon of Photography. Address Secretary, C. Stuart Tompkins, Junction, Camberwell, E. 6, Melbourne, Victoria, Australia, Closing date March 1, 1936. April 17 to May 2, 1936.

Fifteenth International Salon organized by the Belgian Association of Photography and Cinematography. Address Secretary of the XVth Salon of Belgian Association of Photography and Cinematography, M. Maurice Broquet, 77 rue du Sceptre, Brussels, Belgium. Closing date March 15, 1936. Entry fee 6 belgas, limit four prints. May to October, 1936.

Darwen Exhibition of Photography. Address Secretary, J. H. Woods, South Down, Bolton Road, Darwen, England. Closing date March 19, 1936. April 20 to May 2, 1936.

First Annual All-Florida Salon of Photography. Address Salon Committee, St. Petersburg Camera Club, c/o R. Kendall Williams Studio, 410 Times Building, St. Petersburg, Fla. Closing date March 20, 1936. Entry fee \$1.00, limit 4 prints. Only persons residing in Florida may submit prints. March 21 to 24, 1936.

Third Lancaster Photographic Exhibition and Second International Salon. Address David J. Meyers, Secretary, 444 N. Queen Street, Lancaster, Pa. Closing date March 31, 1936. Entry fee \$1.00. Limit 4 prints. May 13 to 23, 1936.

Third Annual Canadian Salon of Photography. Sponsored by the Hamilton Camera Club. Address, Secretary, Hamilton Camera Club, Art Gallery of Hamilton, 22 Main St., W., Hamilton, Ontario, Canada. Closing date April 1, 1936. Entries limited to residents of Canada. April 20 to May 4, 1936.

Third International Salon of Photographic Art at Milwaukee. Address Photo Pictorialists of Milwaukee 772 No. Jefferson St., Milwaukee, Wisconsin. Closing date April 1, 1936. Entry fee \$1.00. May 1 to 13, 1936.

21st Annual Exhibition of the Hammersmith Hampshire House Photographic Society of London, England. Address The Exhibition Secretary, Hammersmith Hampshire House Photographic Society, Hampshire Hog Lane, Hammersmith, London, W. 6, England. Closing date April 2, 1936. Prints may be sent unmounted. April 24 to May 2, 1936.

Fifth Syracuse International Salon of Pictorial Photography, Syracuse Museum of Fine Arts. Address Kent C. Haven, Salon Director, Camera Club of Syracuse Y. M. C. A., 340 Montgomery St., Syracuse, N. Y. Closing date April 15, 1936. Entry fee \$1.00. May 15 to June 15, 1936.

Fourth Annual Princeton Photographic Exhibition, sponsored by the Princeton Camera Club. Address George E. Beggs, Jr., 201 Prospect Avenue, Princeton, N. J. Closing date April 17, 1936. Entry fee \$1.00. Limit 4 prints.

Fifteenth All American Salon. Sponsored by the Los Angeles Camera Club. Address Edna R. Bennett, Secretary, Los Angeles Camera Club, 2504 West Seventh St., Los Angeles, Calif. Closing date May 15, 1936. Entry fee \$1.00. June 1 to 30, 1936.

The Marshall Field & Company Third Annual Photographic Competition and Salon. Address Marshall Field & Company, State, Washington, Randolph & Wabash, Chicago, Illinois. Closing date May 22, 1936.

The Anthracite Photographic Salon. Under the auspices of the Scranton Camera Club. Address, E. W. Taylor, Director, Scranton Camera Club, Everhart Museum, Scranton, Pa. Closing date May 25, 1936. Entry fee \$1.00, limit 4 prints. June 6 to 21, 1936.

Seventh Chicago International Salon of Photography. Address Alex J. Krupy, Chairman, Salon Committee, Chicago Camera Club, 137 N. Wabash Avenue, Chicago, Illinois. Closing date June 15, 1936. Entry fee \$1.00 for 4 prints, July 23 to October 4, 1936.

U.S. Camera Salon at De Young Museum

The U. S. Camera Salon will be on display at the M. H. De Young Memorial Museum, Golden Gate Park, San Francisco, Calif. from March 1st to 16th, 1936. This exhibition consists of the original prints of all the pictures contained in the annual U. S. Camera 1935. This annual has proved to be one of the most popular books of its kind ever published in this country, so the importance and interest of the exhibition may be readily appreciated. There are slightly more than two hundred pictures included in the group representing all phases of photography. Those within traveling distance of San Francisco are advised to remember these dates for they will seldom have the opportunity to view a more worthwhile group of photographs.

Miniature Camera Club of Oakland Stages Snow Trip

First we must apologize for our failure to announce this trip in advance of the event, but space is always short and we knew that the energetic organizers had seen to it that all possible candidates were informed well in advance. The trip is in progress as we write so details of what happened and to whom are not as yet available. However the club deserves every credit for the friendly and efficient way they have carried out their plans. We need only say that they succeeded in signing up about 120 people to take a trip of around 200 miles to show how successfully the project has been carried out. This group includes members of all the photographic organizations in the vicinity of San Francisco and the trip will certainly do much to cement inter-club friendship and co-operation. The club meets on the last Tuesday of each month and full information may be obtained by addressing Edward Towler, Central Bank Bldg., Oakland, Calif.

Los Angeles Recreation Department Sponsors Photographic Clubs

Recreation Depts. of other cities may do well to pay attention to the progressive example of the Playground and Recreation Department of Los Angeles. This department announces the formation of four Camera Clubs under their auspices. The clubs are under the direction of Mr. B. W. Loucks and meet once a week at the following times and places.

Highland Park Playground, Monday—Jr. Group 3:30 P.M.; Sr. Group 7:30 P.M.

Verdugo Playground, Monday—Jr. Group 3:00 P.M.; Sr. Group 7:00 P.M.

Queen Anne Playground, Monday—Jr. Group 3:30 P.M.; Sr. Group 7:30 P.M.

Exposition Community Bldg., Monday—Jr. Group 3:30 P.M.; Sr. Group 7:30 P.M.

The program consists of exhibits, camera trips, print exchange, and a central darkroom to be located at the Exposition Community Bldg. Interested parties are invited to attend any of the above mentioned meetings.

Orange Camera Club Scores

The Orange Camera Club takes the prize for most appropriate festivities. On February 29 (remember this is Leap Year) they are staging a Ladies Night. Courage before caution is apparently the motto of the male members of this club, or is it possible that the bachelors were simply out-voted. At any rate we learn from the club bulletin that this evening is entirely the responsibility of the clubs Darkroom Widows. As the saying goes, "every dog has its day".

Elementary Evening Course in Microscopy and Photomicrography

Mr. George H. Needham, M.Sc., F.R.M.S., is now conducting an elementary evening class in Microscopy and Photomicrography in downtown Oakland. This is the

first time such a course has been given across the Bay, a similar course having been repeated five times during the last two years in San Francisco.

Due to the enthusiastic response to the course, and to take care of those who could not be enrolled the first time due to limiting the class to 15 students, the course will be repeated about the middle of April. It will be given one evening per week for ten weeks. The fee is \$15.00, covering the entire cost of the course, as microscopes, cameras, plates and films will be provided. No outside study will be required, Mr. Needham giving those enrolled the benefit of his twenty years study and research in the subject. It will be assumed that the student has no knowledge of microscopy or photomicrography. The first six evenings will cover the correct use of the various types of microscopes and the many accessories, the uses of polarized light with the microscope, and critical illumination. The last four evenings will be devoted to practical work in photomicrography, each one in the class being required to develop and print from his own negatives made under expert guidance.

Register with the Eastman Kodak Stores, Oakland, or Oakland Camera Exchange, or write to George H. Needham, 2006-10th Avenue, San Francisco, for further particulars.

Camera Club Association Proposed

An association of the camera clubs of the Chicago area is being formed. It is believed that member clubs, each to be represented by a delegate, can benefit in several ways, particularly by convenient arrangement for interchange of print exhibits. The form of the association, time and place of meeting, and other matters are to be determined by delegates from member clubs.

Sixteen clubs known to exist in and about Chicago have been invited to join. A considerable number of these has signified willingness to participate, so that success of the venture seems certain. All clubs in the area are invited to communicate with Green Briar Camera Club, 2650 Peterson Ave., Chicago.

Fassbender

Those interested in the pictorial aspects of photography will welcome the announcement that Mr. Adolph Fassbender is to deliver an address on the fascinating topic of photography on Wednesday evening, March 25th, in the Auditorium of the Central Branch Y.M.C.A., 55 Hanson Place, Brooklyn, New York. The opportunity to hear Mr. Fassbender and to see an exhibit of his work is sponsored by The Tripod Club of the Brooklyn and Queens Young Men's Christian Association. Complimentary tickets may be obtained by communicating with the Club Secretary, Arthur G. Wedekind, at 55 Hanson Place, Brooklyn, New York.

The Manitoba Camera Club

The Manitoba Camera Club did not hold a meeting in December, owing to the Christmas holidays.

At the January meeting a paper was given on "Commercial Photography", and the results of the monthly competition, portrait and figure studies, was announced. The judges gave criticisms on the winning prints. A total of over fifty prints were submitted.

The Club is now looking forward to their annual exhibition, which will take place towards the end of May.

P.S.A. News Items

The Board of Directors has elected B. H. Chatto of Pittsburgh as the Secretary-Treasurer for the year 1936-37. Mr. Chatto was formerly the secretary of the Society. He is also editor of the Journal, and active in every way in the affairs of the P.S.A.

Mr. C. C. Dry of Canton, Ohio, has been appointed Director of the Invitational Salon to succeed Mr. Fraprie who has resigned. He is arranging a schedule of showings at Art Galleries throughout the country.

The booklet "The Camera Club—its Organization and Management" has been revised and reprinted. The new edition will be sent to interested parties at a minimum charge to cover the cost of printing and mailing.

The next convention of the Photographic Society of America will be held at Pittsburgh, Saturday and Sunday, April

4th and 5th. Details will be sent to members and Clubs in the near future.

New Club

The Joliet Camera Club was organized and the first meeting held on February 3rd with the following persons elected to fill the offices of the new organization: Mr. Harold J. Crips, President; Mr. Artur Stanersen, Vice Pres.; Mr. Carl H. Ferris, Treasurer and Mr. Earl Mercier, Secretary. At present approximately forty camera hobbyists have identified

themselves with the organization. Meetings are held on the first and third Mondays of each month. The first Monday being devoted to the interests of the still camera workers, and the succeeding meeting of the month being given over to the considerations of the cine camera workers. The program committee has promised some very interesting meetings for the future and any information regarding the club may be had by contacting the secretary, at 915 Prairie Ave., Joliet, Ill.

Notes and Comments

San Francisco Firm Celebrates Fiftieth Anniversary

The fiftieth anniversary of the founding of the pioneer photographic and optical firm of Hirsch & Kaye, San Francisco, is being observed on March first. Established in 1886 by Alphonse Hirsch, the partnership with L. M. Kaye followed within a few years.

Although its physical properties were entirely destroyed by the great fire of 1906, the business survived. After occupying temporary quarters in the outlying districts, the firm was among the first to be permanently re-established in the downtown section of San Francisco.

Long service is a characteristic of Hirsch & Kaye employees, terms of service ranging from forty-seven years downward. Following the passing of Mr. Hirsch in 1923, the business incorporated, stock being entirely held by the employees. Hirsch & Kaye today is headed by George A. Dolan, who joined the force in 1892. Associated are L. M. Kaye who retired from active management a few years ago, his son, Frank M. Kaye, A. T. Hirsch, son of the late founder of the firm, and some fifty others.

Present quarters at 239 Grant Ave., San Francisco, comprise a six-story building containing a complete photographic department, photo finishing plant, office and display rooms. Likewise are included refraction and fitting rooms for the optical side of the business. These are on the

main floor, and there is also a complete optical factory above.

The firm is proud of its record during the recent depression, having successfully passed through it without reducing its force, but carrying the entire personnel of over fifty intact.

Camera Craft offers its hearty congratulations on the fine record of a mature organization, and says "Many happy returns of the day."

Pictures Wanted

The Dodge Publishing Company, whose publication, **THE BODY BEAUTIFUL**, is now in its second large printing, is sending out a call to all amateur and professional photographers regarding their forthcoming photographic publication, **CHILDREN IN ACTION**. This volume will be similar in format to **THE BODY BEAUTIFUL**, will be edited by Heyworth Campbell, and will consist of action photographs of children up to six years of age. The publishers will appreciate hearing from photographers who wish to make submissions. The address of the Dodge Publishing Company is 116 East 16th Street, New York, N.Y.

Andrew Wollensak Passes

We regret to announce the death of Andrew Wollensak, President of the Wollensak Optical Co., of Rochester, N.Y. on Jan. 10, 1936. Mr. Wollensak is one of America's pioneer manufacturers of photographic optical equipment, and the firm which he built up has supplied pho-

tographers with fine lens equipment for many years.

New Willoughby Bargain Book

The publication of a Willoughby Bargain Book always means that photographers throughout the country are given the opportunity to save themselves considerable money by acting promptly to get their copy of the book. The present book runs to twenty pages in which are listed cameras, lenses, etc., of every description. Write to Willoughby's, 110 W. 32nd St., New York, N. Y. today. The booklet will be sent free of charge.

Root-Mandabach Agency in New Quarters

In this issue **Camera Craft** is announcing its removal to new and larger quarters. We are happy to learn that other firms are also finding similar moves necessary because of increased business. The above mentioned agency numbers photographic firms among their clients so their prosperity is no doubt a reflection of better days in the photographic industry as a whole. The Root-Mandabach Agency is staying in the same building at 20 No. Wacker Drive, Chicago, Ill., but is taking larger space on the third floor of the building.

Photographs Wanted

The Rose Company 24th and Bainbridge Sts., Philadelphia, Pa., wants photographs suitable for reproduction on Greeting Cards. Summer landscapes, flowers, and human interest subjects are among those sought after. The photographs must be available for exclusive use on greeting cards and prints are preferred in 8x12" size on glossy surface. Minimum price paid is \$5.00 more for exceptional subject. A prize of \$5.00 will be paid for the best picture submitted.

16 mm. Film

In a 100 page booklet issued by the Victor Animatograph Corporation there is given a complete list of where to buy, rent and borrow 16 mm. silent and sound film. The great usefulness of this book to all 16 mm. projector owners is obvious. The Victor Company is to be congratulated for this fine public spirited service. Books may be obtained free of charge by writing to Advertising Dept., Victor Animatograph Corporation, Davenport, Iowa.

Kalart Speed Flash

The Kalart Speed Flash is the latest addition to the family of photoflash apparatus bearing the Kalart trade mark. Like the more expensive Kalart Model C Photoflash Synchronizer, the Speed Flash is designed to operate with all compur shuttered cameras, enabling the photographer to make "stop motion" photographs under any light condition. The price of the Speed Flash is exactly one half that of its predecessor—the Model C Synchronizer—and retails at \$11.25 complete.

Leica Inventor Dies

It is with the deepest of regret that we learn of the death of Oskar Barnack, often called "the father of the Leica camera". He passed away on January the 16th, 1936, after a long illness. The miniature camera as it stands today owes a great deal to this man who did so much for miniature photography in general and the Leica specifically, and we are sure our readers will join us in regrets at his passing, for there were many fruitful years still ahead of him—years in which he would undoubtedly have continued to work for the improvement of his first love, the Leica.

In 1911 Barnack came to the Leitz Works in Wetzlar where he worked on microscopes, all the while dreaming and experimenting with his tiny camera, which he had been perfecting in his spare time. After satisfying himself on the practical aspects of his camera, he strived to have it produced commercially. After some time the factory consented to giving the matter consideration, but the World War stepped in at this point, halting all continuation of the project. It was not until after the war that the Leica as we know it today was made available to the public.

Today the Leica is known all over the world, and its inventor, Oskar Barnack, has supervised its manufacture and growth throughout the years since its introduction. He has produced the newest improvements and accessories, increasing the scope of its usefulness and versatility.

The debt modern photography owes to Oskar Barnack is incalculable. Through

his introduction of the Leica he has opened up the vast field of modern miniature photography—a field which is responsible for modern candid photography. In addition he has constantly fostered new innovations and principles in camera construction so that to-day we have available an instrument which is built within the tolerance of microscopic precision, which is almost fully automatic, and which can be applied to every field of photographic endeavor. The photographic world will indeed mourn the loss of inventor Oskar Barnack, a man who has greatly widened the scope of photography.

Foth-Flex

"It's the **extras** in the Foth-Flex, 1936 model, which makes its debut in the U.S. such an important event," writes the Home Camera Company of New York. For example, the self-erecting hood cuts an **extra** second from "making ready"; the **extra** full second in the shutter gives that much additional time for pictures in poor lighting. The extra brilliant viewing lens gives that ease of focussing and resultant sharpness of image so essential for enlarging after the 10th diameter. The automatic frame counter is still another **extra** convenience pointed out as being a feature.

To readers of this publication interested in cameras of the twin-lens reflex type, the Home Camera Co. of 129 W. 22nd St., will gladly send its literature if a postal card request is made.

Mendelsohn Remote Control Adapter

The thousands of owners of Model C, (All Electrical) Mendelsohn Speedguns will no doubt welcome the announcement that a new accessory, known as the Remote Control Adapter, will convert the Speedgun into a device for operating camera shutters electrically, with or without photoflash.

Since the Remote Control permits the photographer to hide himself or the camera, owners of Speedguns will have the added advantage of being able to make pictures of extremely candid nature; from any distance; from any height; from any depth. Self-portraits nature studies; criminal evidence pictures; amusements and dozens of other interesting types of pho-

tography are opened up to Speedgun owners through the introduction of Remote Control. The Remote Control Adapter, which sells for \$3, can be obtained from dealers already selling Speedguns or can be ordered direct from the factory, S. Mendelsohn, 202 E. 44th St., New York City. A complete folder, entitled "Auto-Portraits" tells more about the Remote Control and gives suggestions for special hook ups. It is free for the writing.

The Roland Miniature Camera

Compact, sturdy, of precision construction throughout, the Roland is not merely another camera—designed to complicate an already glutted market. The Roland Camera, one might say, is a mechanically accurate housing for a lens most ideally adapted to the particular requirements of miniature photography.

The culmination of a life-time of endeavor and research, this lens was designed by Dr. Paul Rudolph, noted as the inventor of the Tessar Anastigmat, the Plasmal and the Kino-Plasmal for Cinematography.

Applying the principles inherent in the Plasmal series—in particular their sharp definition at every plane of the picture with modifications essential to miniature photography, Dr. Rudolph created, as a final monument to his genius, the six-component Miniature Plasmal f/2.7.

In collaboration with Dr. Winkler who designed the Roland Camera, was thus produced a combination of mechanism and optic intended to provide the careful miniature photographer with an instrument capable of the very highest type of performance.

In this connection it must be stressed that the usual Anastigmat lens, while recording definite sharpness at the distance on which it is focused, indicates diffusion at other planes of the subject while the Miniature Plasmal possesses a uniformity and depth of definition which render it particularly useful for miniature work—as it enables enlargements of an unusually large area and a contact-like quality.

The mechanical construction of the Roland and its many refinements are on

a par with the optical excellence and high corrections of its lens. A very dependable, luminous, easily operated distance meter of an approved type and long base is uniquely combined with the view finder so that field of view and accurate focus are obtained by a single manipulation. The synchronization of the distance meter with the camera lens is a further advantage providing the Roland with the sharp focus and ease of operation usually associated with cameras of the Reflecting type. The lens is mounted in an air-tight barrel provided with a precision helical focusing mount in delayed action Compur Shutter with speeds up to 1/250 or 1/400 second.

Minor refinements include a specially designed film guide which ensures absolute flatness of the film by means of a spring pressure plate, film windows which are light trapped for sensitive emulsions and depth of focus scale.

The camera is sturdy, compact and handsome and conveys the impression that it might easily afford a lifetime of pleasurable use. Its dimensions are $1\frac{1}{4} \times 3\frac{3}{8} \times 5\frac{3}{4}$ " and it weighs 23 oz. It makes 16 pictures on $3\frac{1}{4} \times 2\frac{1}{4}$ " film. Picture size $2\frac{1}{4} \times 1\frac{3}{4}$ ", a format which does not require enlarging.

It is furnished with either a normal Compur shutter with speeds up to 1/250 second, or with Rapid Compur Shutter with speeds up to 1/400 second. The former model is listed at \$92.50, the latter at \$97.50.

Such incidentals as Cases, Filters, Portrait Lenses and Sunshades can be provided at moderate additional cost.

The Roland is distributed in the United States and Canada by Pfaltz & Bauer Inc., of 300 Pearl Street, New York, who will be pleased to send literature to interested readers.

Zeiss Ikon Exhibition

The second annual traveling exhibition of photographs as originated by Carl Zeiss Inc. in March of last year, will be repeated this year. The exhibition will contain about 350 selected photographs covering every field of photography. Most of them were made with miniature cameras but some will also be shown made with larger size cameras. For there are

numerous amateurs interested in both the smaller as well as the larger types of cameras. Predominating will be photographs taken with Contax cameras and Contax equipment.

The collection avoids posed photographs and concentrates on candid photography. It will contain some high lights, but the majority of the pictures will demonstrate the work done by the average amateur photographer. Some modern exhibitions seem to miss the point that it is necessary to encourage the amateur. A selection of pictures which he may feel unable ever to attain may possibly discourage him.

The Zeiss Ikon exhibition will start during the first week of March in the Show Room of Carl Zeiss Inc., 485 Fifth Avenue, New York. It will thereafter be shown in

Boston at the Parker House Hotel, March 9-11th.

Philadelphia, Ritz-Carlton Hotel, March 18th-21st.

Pittsburgh, Hotel William Penn, March 26th-28th.

Chicago, Auditorium Hotel, March 30th-April 4th.

Detroit, Hotel Book-Cadillac, April 9th-April 11th.

Cleveland, Hotel Statler, April 16th-April 18th.

Open daily from 10 a.m. to 9 p.m. Admission free. Mr. Frank A. Dorner and Mr. E. Smerage will attend, give information and demonstrate the extensive line of Zeiss Ikon cameras. Everybody interested in photography is welcome.

Camera Corner

Camera Corner, 80 Willoughby St., Brooklyn, N.Y., is offering unique combined apparatus in the advertising pages of this issue. One may obtain a precision 5x7" View Camera with tilting, rising, and lowering front complete with metal tripod head, strong six foot tripod, and three double plate holders for \$45.00. They also offer a Printing, Enlarging, and Copying unit built to fit the back of the above mentioned camera. This includes an indirect lighting system, and is priced at \$30.00. The two together may be had for \$70.00. Write to the Camera

Corner at the above address asking for Booklet "0" which fully describes the equipment mentioned above and much else and is free on request.

Edwal Developers

Those who are looking for prepared fine grain developers compounded by expert chemists will do well to try out those offered by the Edwal Laboratories, 732 Federal St., Chicago, Ill. This firm after much research now recommends two principal developers. Super-12 is best suited to all around work, while in cases where the finest possible grain is required Super-9 should be used. Available at all dealers in pints or quarts, or full information may be had by writing to the above address.

Master-Bilt Enlarger

If you are looking for a low-priced vertical enlarger that will use the lens you have in your camera, write to Harold Francke, 433 East Bay St., Milwaukee, Wisc. Mr. Francke is offering a strongly built enlarger at the remarkable price of \$17.50. An Adjustable Paper Holder may be had for \$5.75. Write for full information.

Coronet Midget Camera

When first placed on the market the so-called vest-pocket camera really seemed just that because it was so much smaller than the cameras in use at that time. Today these cameras no longer impress one as being particularly small in size especially when one sees a camera to which the above phrase can be literally applied. The Coronet Midget is actually about the size of a match box and uses 16 mm. motion picture films. Write to E. B. Meyrowitz, Inc., 520-5th Ave., New York, N. Y. for full information.

Micrograin "85" Achieves Deserved Popularity

Since the introduction of Micrograin to the photographic field, its popularity has grown steadily and swiftly. Today it holds a prominent position on the photographer's shelf.

According to the manufacturers Micrograin permits enlargements up to 100 diameters, is very simple to use, comes ready mixed and can be poured back into the bottle after use without deterioration.

It keeps indefinitely. Fifteen rolls of Leica, 25 rolls of Vest Pocket or 18 rolls $2\frac{1}{4} \times 3\frac{3}{4}$ film can be developed with one 32 oz. bottle at a minimum cost.

Micrograin "85" it is said acts on a new and revolutionary principle yet it is a chemical developer. It produces very superior negatives compared to the ordinary chemical developer and though the process is different, the negative possesses excellent printing quality. Hardening of the emulsion during development eliminates scratches. Micrograin "85" is now available from the Central Camera Company, Dept. 9693, 230 S. Wabash Avenue, Chicago, Illinois, at new reduced prices.

The Duto Rolleiflex Soft-Focus Lens

At the beginning of all photographic discussions and debates, these questions are everlasting asked. How does the eye look at the object? But how does the photograph look?

In practice, one thing is certain—that most motifs require needle-sharp focus and painstaking exactness—in short, Tessar precision. Some motifs, require, however, the ingredients of charm, warmth and softness, they must be interpreted in the photograph as magical, they must be soft and tender and dreamy—they require the fine, silky sheen of a luminous light tone. In photographic parlance, these motifs must be reproduced by "soft-focus".

The simple aids used until recently—such as monocular lenses, diffusing screens, nets and veils were hardly capable of producing the desired results. Special soft-focus objectives, on the other hand, provide good results, but are expensive and quite often complicated in their manipulation. It is particularly desirable, however, to be able to make normal as well as soft-focus exposures without having to remove and change objectives. A complete solution to this problem is offered by the DUTO Rolleiflex lens, an inexpensive, easily attached lens of an auxiliary or supplementary type which is used in conjunction with the camera's standard objective.

For photographic tyros it is necessary to state that soft focus effects must not be confused with a condition of "unsharpness". Because of the equalization of hard

contours, the picture becomes softer but does not lose its sharpness. The sharp nucleus of the picture remains overlaid, however, by a luminous halo so that the effect corresponds closely to the manner in which the eye would see it.

A soft-focus picture is consequently plastic, luminous, radiant, whereas an out-of-focus photograph is cloudy, indistinct and hazy.

Results obtained with Duro Lenses were particularly noteworthy in the recent Rolleiflex and Rolleicord Prize Contest. Two of the three first prizes were "DUTO" Exposures.

The DUTO lens consist of a plane-parallel glass disc with concentrically ground furrows. The light between the furrows gives the nucleus of the picture; in the furrows, however, the light becomes partially diffused and creates the fine halo characteristic of soft-focus effects.

Lens "0" possesses lesser power and is

intended for stronger light effects. No. "1", the more powerful lens for less contrasting light effects. With Counter-Light and in Portraiture the standard Lens No "0" should be used.

The DUTO lens does not affect either the focal length or the light transmitting power of the objective.

It is exceedingly simple to use DUTO Lenses with Rolleiflex and Rolleicord Cameras. When placed on the taking lens, one focuses the finder screen, as usual.—With No. "0" it is advisable to use an aperture of $f/4$; with No. 1, $f/5.6$. Exposure time should be sufficient to yield a soft and radiant picture. Developing should be done very carefully. Results in color photography are astonishingly beautiful.

For further information on Duto Lenses, it is suggested that you consult the firm of Burleigh Brooks, New York City, American Distributors of Rolleiflex Cameras.

Classified Advertisements

POSITIONS WANTED

◆By young man experienced in commercial and kodak finishing. Also does bookkeeping and typing. Has had good experience and can furnish references. Prefers small studio in California. H.L.O., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

◆Reliable young man, experienced in all branches of commercial photography wants work in a commercial studio. References gladly furnished. Louis Dorman, 1107 Mar Vista Ave., Pasadena, Calif.

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(Continued on next page)

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"Muddy Waters"

William Mortensen

Facts & Foibles In Photography

H. C. Benedict, Ph. D.

No. I. The Concept of Scale, in Subject, Negative and Paper.

PHOTOGRAPHY is, to a large extent, an art. Details and procedures have been so thoroughly worked out that it is necessary only to follow the directions faithfully, in true cook book fashion, in order to obtain good technical results. It is unnecessary to be either a chemist or a physicist. The procedure is easier and certainly the task is more fascinating, if the reasons behind some of the recommended steps are known. This is a description of a few experiments and calculations designed to answer the question, "Why". Some of these experiments are quite simple, and it is strongly urged that you repeat them under your own conditions, and with the particular materials you usually employ. If they are carefully and understandingly done and if the conclusions drawn are put into practice, the quality of the prints is bound to improve and the enjoyment in the work will, if possible, be increased. For the benefit of those unfamiliar with the terms used, it may be well to give here some definitions and explanations.

One of the most valuable single concepts in photography is that of "Scale". There are various synonyms for "Scale" in this sense. In the booklet on the Weston Exposure Meter, subject scale is called "brightness range", and in Clerc, "Photography, Theory and Practice" it is called, "Range of Extreme Luminosities". But "Scale" is preferable because of its conciseness and because it is equally applicable to subject, negatives and papers. Once thoroughly understood, the principle of "Scale" will assist in the exposure and development of the negative, as well as the choice of negative material and correct paper to use. It enables us to avoid confusion due to the use of inexact arbitrary and contradictory terms such as hard, vigorous, contrasty, soft, flat, etc. These terms

should be discarded, and undoubtedly would be, if ancient usage had not made a change difficult. They are inexact because we have no numerical figure which states how "hard" a paper labelled "hard" will be, and papers of different manufacturers will vary. They are arbitrary because a paper one manufacturer calls "hard", another will call "vigorous". They are illogical and contradictory because a hard paper is used on a soft or flat negative and vice versa.

The term "Scale" has none of these disadvantages. It is exact, logical and consistent, it may be expressed numerically. A long scale subject requires a long scale negative material which in turn should be used with a long scale paper. (A number, say 30, could be substituted for "long" in the previous sentence and the sense still remain true but specific). The scale concept is extremely simple but may seem confusing at first until its logical consequences are understood.

Brightness Scale of Subject

The brightness scale of any subject may be defined as the ratio between the intensities of light reflected from the lightest part of the subject and the darkest part. For instance, the brightest part may have a brightness of 400 units while the darkest part may have a brightness of 10 units, the scale, therefore is $400/10$ or 40. This does not require a knowledge of the absolute brilliance of the parts in question and therefore may be measured with any exposure meter. Due to the problem of eye adaptation in the visual type meter, a photo-electric cell, such as the Weston Meter, will give the most exact and consistent results. Examples of the determination of the subject scale by a visual meter have been given by Mr. D. E. Jack in *CAMERA CRAFT* for July 1934, p. 318. (c.f. his comment. *Ibid.*, August 1934, p. 399).

With the Weston Meter, the problem is even simpler as the needle pointer reads directly in brightness units, (candles per square foot), and a simple division of the two readings on the lightest and darkest parts will give the scale of the subject. For instance, suppose we want the scale of a subject which includes a white house in sunlight and some shadows under a tree. From the readings given in Fig. I, it can be seen that the scale is shorter than one would suppose. The actual measurement on the lawn in the shade varied slightly, due to the fact that the depth of shade varied. Taking an average of about 10, the over-all scale is 80, which is a long scale subject. Until the introduction of highly orthochromatic and panchromatic films, a white sky was commonplace. Many even believed the sky was the brightest object in any picture and that the new films were wrong and overcorrected the sky. Here we have evidence that a blue (cloudless and hazeless) sky is less than half as bright as sun on a white house. Note that the scale between the sunlit and shaded sides of the house is only 10, rather a short scale, and that if the shade under the trees were not included, the scale would be $800/50$ or 16. A nearby scene gave a reading of 50 on a black tar roof in the open sun. Here a bright white house and a black roof only have a scale of 16. The conclusion we can draw from these figures is that the scale is not as long as one usually believes and that the truly long scale subject is rare. As the scale rapidly decreases with lack of shadows,



Fig. 1. An example of "Brightness scale of subject". The numbers indicate Weston meter readings in candles per square foot. (Photographed about 5 P.M. early in June, exposure 1/30 sec. at f.8. without a filter on E.K. Portrait Pan.)

we have one explanation for the unsatisfactory pictures one usually takes in overcast weather. Not that there is not enough light, we need only increase the exposure to compensate, but that the scale is so short it can not be printed properly unless the negative has had special development.

As it is frequently impossible to determine the brightness scale of the subject accurately, either due to lack of time, inclination or distance of subject, and as excellent pictures are being obtained without any apparent consideration of the subject scale, we are forced to one of two conclusions. Either the subject scale is unimportant or it is not as difficult to ascertain as it seems.

The latter conclusion is the true one. For instance the Eastman booklet on "Outdoor Exposure" divides the subjects into four classes on the basis of scale. The Wellcome Exposure calculator divides the subjects into ten groups in all, also on the basis of scale. The Weston meter makes only three such divisions. The subject scale is, therefore, not unimportant for exposure determination and is even more important when the time of development is considered. For all general purposes it suffices to divide our subjects, apparently arbitrarily, but actually based

on past experience or previous measurement, into three general groups: Short scale 5-20, medium scale 20-40, and long scale 40-80. The figures given are somewhat arbitrary and are a qualitative guide only. See the Eastman "Outdoor Exposure" or the Wellcome Exposure calculator for illustrations of examples of these groups. In the older terminology, these would correspond to flat, average and contrasty subjects. It is a rare subject whose scale is greater than 80 even in bright sunlight. An example of such a rare subject would be a redwood grove or forest in which some sun came through the breaks in the trees.

This division into three general scales of subjects is the simplest possible which will achieve good results. It is obvious that it would be possible to make more divisions and in this way increase the quality but subdividing can be carried too far because certain other factors, such as exposure time, developer composition, temperature and age, which affect development time, can not be determined with sufficient precision. Experienced photographers may not knowingly make any differentiation, but the excellence of their results shows that unconsciously it is made or else that they deal with only one type of subject matter where the "brightness scale" is a constant factor.

Later, it will be brought out quantitatively just how the brightness scale of the subject affects the exposure used and more particularly, the time of development. Qualitative rules are given, in tabular form.

<i>Subject Scale</i>	<i>Exposure</i>	<i>Development</i>
Short	Minimum	Maximum
	($\frac{1}{2}$ - $\frac{1}{3}$) Normal	(20%-50% more than normal)
Medium	Normal	Normal
Long	Maximum	Minimum
	(2-3x Normal)	(20%-50% less than normal)

The two purposes of these rules are: to obtain a pleasing rendition of the subject, and to produce uniform negatives which will require only one grade of paper. Naturally, there are frequently occasions when the above rules are purposely violated. We may not want an exact rendering in monochrome of our subject but may desire to emphasize some characteristic by intentionally falsifying the values. Examples are, high or low key, moonlight scenes, etc. But, to be certain that one can, on demand, reproduce a special effect, the steps must be carried out intelligently, with a full understanding of the "why" and "wherefore" of each one. A complete working knowledge of the concept of scale is invaluable. (Note that the above rules do not necessarily give a *faithful* rendition of the subject. Actually a faithful rendition of a short scale subject would be most unsatisfactory, muddy and wishy-washy.)

Loosely speaking the brightness scale of the subject is the exposure scale of the negative. The fact that these are not equal in practice shows that visual and photographic brightness values are not equal. The photographic brightness values are subject to two corrections. First, it is well known that any photographic lens, with several glass—air surfaces, produces a certain amount of flare (even when carefully hooded) which

increases the photographic *shadow* brightness and thus makes the photographic less than the visual brightness scale. In the average lens this will amount to about 25% reduction in scale. The second factor is less predictable and depends on the presence of color in the subject and the color correction of the film. An extreme example will illustrate the point. Imagine a bright red brick house silhouetted against a clear blue sky. Visually these will be fairly close together in brightness, the visual brightness scale will be about four. But if this subject is photographed on an orthochromatic film with no filter the sky will photograph almost white and the red house almost black and the photographic brightness scale is apparently a long one. By the use of panchromatic materials this factor becomes almost negligible.

Transmission Scale of Negative

Having covered the brightness scale of subject concept at some length, the negative scale can be explained more briefly as the basic principle is identical. If we substitute in the subject scale definition the word "transmitted" for "reflected" we have essentially the definition of negative scale. To paraphrase, the scale of any negative may be defined as the ratio of the intensities of light transmitted by the thinnest part of the negative and the densest part. The actual measurement of this scale on the negative of an average subject is most difficult because the areas involved are usually very small. It may be and is being done on moving picture film by the use of special densitometers, designed to measure very small areas. It fortunately is not necessary to make such a measurement on each negative if the subject scale has been estimated or determined and if we know the effect of development on negative scale. The determination of this last factor is not complicated as it may be performed with a home-made densitometer on easily prepared strips. The details will be given later.

Again there is a discrepancy between the transmission scale of the negative measured visually and measured photographically. The difference becomes of importance when pyro is used as a developer. The yellow image stain produced by pyro acts as a filter for the color blind papers and increases the photographic transmission scale markedly. The effect is negligible or small when a non-staining negative developer is used.

Qualitatively, it can be said, that increasing the time of development increases the "transmission scale" or contrast of the negative. It seems axiomatic that the negative of a subject which transmits light in the same ratio as the light reflected from the subject, (i.e., both negative and subject have the same scale) would give the most faithful rendition of the subject. This is strictly true only of a positive transparency with the same scale as the negative and subject when viewed by transmitted light. The rendition is almost faithful when a transparency, such as a lantern slide or moving picture film, is projected, and only approximately faithful for paper prints even when the paper has the same scale as the negative and subject. The reason for this fact is that, even under optimum illumination, the light reflected from a given portion of the print, say the highlight area, is practically never as great as the light reflected from the

corresponding portion of the subject. A transparency, however, may be viewed by any intensity of light and in this way the highlight brightness may be made as intense as that in the subject, hence we have a strict reproduction of the subject in monochrome. In order that the paper used may have the same scale as the negative, contact papers are usually supplied in four to six scales or degrees of contrast.

Exposure Scale of Paper

Before we become too involved with exposure scale of the paper, let us define it. On a little thought it will be evident that we do not have a set of conditions in a paper similar to that in a negative. A print is seen by reflected, not transmitted light. A piece of white paper will reflect just so much of the incident light and no more, a photographic black will reflect a small proportion of the incident light and therefore is not a true black. The ratio between these intensities of light is a *constant* for any given finish of paper, and is not the exposure scale but the "reflection" scale of the paper. Paper with the same finish may be obtained in several grades which vary in exposure scale. Therefore, our paper scale definition has to be paraphrased slightly differently. The exposure scale of any paper may be defined as the ratio of the intensities of light (essentially printing times) required to produce the faintest trace of a silver deposit (the lightest part) and the darkest obtainable black (the darkest part).

The determination of paper scale is thus a very simple procedure and the method is suggested by the definition. A constant light source should be used, regular incandescent bulbs are excellent. The distance from the bulb to the paper should be fixed. It is well to make the tests during that part of the day when the voltage is not changing, as the light efficiency falls off much more than the voltage drop would indicate and vice versa. Witness the effectiveness of Photoflood lamps. At factory starting or closing time and more particularly at dusk, there will be quite appreciable changes of voltage, so during mid-morning, mid-afternoon or mid-evening, the voltage will fluctuate least. It goes without saying that all tests on any given paper must be made at one session. With the constant light source, the time of exposure is determined which is required to produce, on development, a very faint silver deposit. The light source must be adjusted as to distance so that this time is of the order of magnitude of five seconds. In this way the timing may be accurate. The timing is best done with a stop-watch although an electric clock with a large second hand is an excellent substitute. Now take a strip of the chosen paper about an inch wide and five inches long, cover one half inch and give the predetermined basic exposure. Cover another half inch and repeat the basic exposure. Now alternately cover a half inch and double the previous exposure until the strip is used up. Develop completely (at least one minute for contact papers and two minutes for projection papers), fix, wash, and dry. We now have a strip with the following multiples of the basic exposure: 0, 1, 2, 4, 8, 16, 32, 64, 128, 256. Examine this strip in good north light. If there is no increase in darkening after 32, the scale of the paper is about 30. It may be neces-

sary to make another strip with smaller steps if the end of the scale obviously comes between some of our multiples. Look through the paper strip at some strong light source. It will be noted that there are several shades of darkening visible by transmitted light that are not visible by reflected light. This fact is suggestive, when considering the scale requirements of the negative or the ability to alter the scale of a paper by manipulating development. It shows how important it is to have the paper scale and the negative scale properly chosen and also that the change in scale of a paper due to developer manipulation is, to say the most, very slight.

This determination should be repeated for each brand and grade of paper you use. While some paper scales which have been determined will be given, they are not intended to imply that similar results will not be obtained with another brand of paper.

<i>Brand of Paper</i>	<i>Grade</i>	<i>Exposure Scale</i> * †	<i>Relative Exposure Time</i>
Velox Velvet	1	—	100
Velox Velvet	2	25	60
Velox Velvet	3	—	30
Velox Velvet	4	—	12
Azo	0	75	100
Azo	1	45	50
Azo	2	35	40
Azo	3	25	30
Azo	4	18	20
Azo	5	12	12
Vitava Athena		25	8.
P.M.C.....	Normal	90	60
P.M.C.....	Medium	45	30
P.M.C.....	Contrast	20	12
P.M.C.....	Extra Contrast	18	—
News Bromide.....	Medium	45	—
Vitava Projection	2	35	60
Vitava Projection	3	18	30
E.K. Portrait Proofing ..		25	40
Vitava Opal		25	45

*Experimentally determined.

†Personal Communication Eastman Kodak Research Lab.

The contact papers were developed in D. 72 for 1 minute at 70° F. and the enlarging paper in D 52 for 2 minutes at 70° F.

These scales values are the average of several determinations by two methods and have been rounded off in order to avoid the impression of fictitious accuracy. The agreements with those quoted from Eastman Kodak Co. are quite good, the error in almost every case being much less than from one grade of paper.

The relative speeds of emulsions are not to be taken too literally as this speed varies slightly with the age of the paper and also with the emulsion batch. As in films, it is interesting to note that the shorter

scale (more contrasty) papers are slower. This seems to hold true most strictly for Azo papers where the product of scale and exposure is a constant. This suggests some interesting relationships if the methods of changing contrast or scale were known.

One more factor must be taken into consideration—that is surface finish of the paper. While it is true that the emulsion alone controls the exposure scale of the paper, the reflection scale (comparable to brightness scale of subject) may be altered by the surface. A glossy white paper reflects more light than a matte white and conversely, a glossy black appears darker than a matte black. The result of this fact is that a print made on glossy paper will appear more contrasty than one made on the same grade of matte paper. This reflection scale on a matte paper will be of the order of 1 to 20, while on a glossy paper it may reach 1 to 50. Semi-gloss paper will have an intermediate position. A procedure which will establish the point, and which is also frequently used to improve a matte print not having quite the desired quality of life or snap, is waxing. While a special photographic waxing solution is on the market, some workers use a prepared floor wax or automobile wax and either is entirely satisfactory.

To prove to yourself that glossy prints appear more contrasty than matte prints, prepare a matte print which does not quite have the desired quality, one which would be called slightly flat, and preferably slightly heavy, and wax one half of it. The result will be apparent to anyone and very convincing. It is also interesting to wax a matte paper scale strip.

In summarizing from our information thus far, it can be said: *First*, unless a special effect is desired, the scale of the paper *must* fit the scale of the negative, i.e., it must be equal to or slightly longer than the negative scale. *Second*, A variety of grades of paper must be maintained from which to choose. Or, *third*, the negative must be made to fit the previously chosen paper by proper development. (This phase of the problem will be taken up later). *Fourth*, Glossy paper of the same grade may adequately increase the visual contrast of a paper or the matte print may be waxed.

This is the first of a series of four articles by Mr. Benedict. His next article, which will appear in the May issue will discuss the manipulation of the exposure scale of the paper. In other words he will describe the various methods which have been suggested for obtaining a more contrasty or a softer print from a given negative and paper, and evaluate the results obtained by these methods.—Ed.

Action Shots At The Seashore

Woods Peters

FREEZE or not to freeze is the burning question with lens manipulators prowling the seashore. "Where lies the finest shade of art?

In what precise proportion—if there be a proportion that is precise—should action be stopped? Where is the portrayal of movement and life best registered?"

The problem has become particularly difficult in recent months since the candid camera and other high speed equipment has come into popular use. Advertising and the beauty of fine equipment have lured Brownie users to the 6.3s and 4.5s, and the "high" speed amateurs of yesterday have stepped to the 2.5s, 1.9s and even faster. What is the result? There is a flock of disappointed photographers, each with \$60 to \$600 tied up in new equipment that renders, in their hands, poorer results than did the "push the button, we'll do the rest" single lens boxes.

Fast equipment in uneducated hands is as tricky as putting a baby on a tight wire over the Royal Gorge. It cannot successfully be done. The answer, then, is education, and the definite registration of errors for future correction.

Go buy yourself whatever it is you have in mind. Sit down and study the acquisition. Read diligently the book of instructions, wiping out any mental reservation that it doesn't sound right. Remember that a 1.9 objective is 10.9 times as fast as a 6.3, that a 1/10 second with the latter calls for approximately 1/100th of a second with the former, light and subject being the same. Get a good light meter and use it in accord with instructions. Don't guess. Then:

Go into the study of films. Record the developers that should be used with each, and use them. If you seek really good reproductions, give also a thought to papers, for each of the many varieties are adapted to specific ends and few will give equivalent excellent results. Look into



"Learning How"
Farbman

the matter of filters, and learn why an F is sometimes preferable to an A, and when to—or not to—use a specific K.

To the beginner, all this sounds complicated. It is. It is not directed to that individual who is just stepping into the amateur field. But for the man or woman who "mixes his own" and seeks those works of art that warrant framing or hanging in competition, the study is well worth the effort, and the faster lenses become fine tools with which to catch those fleeting casual subjects that are pictures.

Perhaps no other single place offers the wide range of possible compositions that are to be found along the coastlines of our nation. Nowhere else are life, action, and the flowing lines of nature as constantly changing. Nowhere can the same combinations of color tones ranging from the dark silhouettes of trees against a moonlit sky to the limpid transparency of lifting waters, save at the beach.

Action is the keynote of life today. Action is the compelling highlight of any pictorial composition. It is action, unrestrained and in its natural state, that should be the goal of seashore work,—whether portrayed by the suggestion of movement in a setting sun or in the dash of spray against the proverbial rock bound coast.

It is presumed that the worker who has invested in finer equipment knows something of pictorial balance. That subject will not be touched here, save to record that it is an inherent part of successful operation. It is a matter primarily of masking on the enlarging easel, but is men-



"Action In Waikiki Surf"

Pan Pacific Press

tioned to record the fact that composition on the negative aids considerably. If the action is properly spotted, there is less likelihood of lost negatives through inability to gain balance in the print. I refer particularly to the "Flag Day in Hawaii" shot, reproduced herewith, where this error is emphasized. Note the instability, the even weight left and right that gives the feeling of insecurity. Transpose the flag to the left one-third and it is somewhat better. The folds flow into the picture; the buildings and flags give predominance and center attention on the double action—movement of the flag and the bathing group. Drop the flag, in its new position, to clear the bathers' heads and mask out buildings and scenic background and you have—"Under Homeland Suns".

Angle of view can make or break a photograph. The trend today is toward the unusual, not in subject matter but in presentation. Cameras low to the ground give height; cameras high—if high enough—give converging lines with compelling interest. Trick masking, to be found only through test, offers weird combinations that cannot be passed with just a glance. (Compare "Learning How" with the blase results that would have been obtained from an eye-level view).

Naturalness is the next requirement. The stiff, posed picture is definitely "out"—it has joined the limbo of head rests and half hour exposures. "Steal" the shot or talk to the subject until reserve is broken, then



"Flag Day in Hawaii"

expose. It requires fast action, swift focussing and in many cases good judgment of blind pointing but the results are worth the effort. Keep eyes out of the lens!

Now, what to use? And here one steps into the dangerous territory of personal fancies. There is no set camera or lens that can be definitely said to be "the only one" for sea shore work. It is even possible to get passable negatives of a type with nothing more than a pinhole before the open film. No speed work is yours, then, of course, but charming vistas of sunlit waters and silhouetted trees can be made with such rudimentary equipment. If your camera is a dollar box, use it within its realm of adaptability, and when you can, go into the better equipment.

For seashore work of the wider ranges one needs not less than a 4.5 lens; he needs a shutter of 1/500 on the smaller films and up to 1/1000 on 4x5 films or larger. He needs a filter of K2 density, and an A or an F for those dark skies and brilliant clouds that add so much to an art print. He needs pan film, by all means, for without it the filters are practically worthless and color renditions less accurate.

The still faster lenses are even better, not for normal work but rather for those unusual instances where sunlight is poor, or where filters of the heavier types are advisable and exposures cannot be lengthened. But beyond the 4.5 it is largely a matter of how deeply the photographer wishes to go. Is expense a factor that outweighs variety? Or is your hobby a vocation where the best is none too good? Those are questions that the individual must answer, remembering that like telescopes, the



Water Polo—Waikiki Beach

Scenes such as this call for swift focussing and accurate timing on the part of the operator. Shutter exposure was about 1/100, too slow to have stopped the arm movement at any point except at the end of the throw.

better the refractor the more extended the opportunity for seeing and registering the fleeting jewels of life.

The camera itself should be optional within the groupings of three distinct types:

The reflecting camera is perhaps the more common. For the average amateur it has the advantage of print sized images to the instant of exposure, and focussing directly upon a ground glass.

Speed Graphics or Kodaks use focussing scales or attached range finders. The former has the worthwhile feature of interchangeable lenses and ease of attachment of synchronized flash guns.

So-called "candid" cameras are the easiest of all to carry, but the trickiest of all to handle. Palm sized, they require critical focussing and skilled technique in the darkroom. Their cost is high. Their work, however, when properly handled, is unique. But here is a word of warning: do not lay out money for a midget unless you are familiar with what you are buying. Much disappointment has resulted from an expensive investment that in later investigation offered no advantages other than a "bigger lens" that was rarely called into use.

So much for the camera, shutter and lens. We will not discuss the

choice of films. That subject is largely a matter of experimentation for climatic conditions, length of time before development, and range of your subject matter will all have a bearing upon brand and type. We have mentioned pan film; beyond that it is "trial and error."

Finally at the seashore, it is than a matter of exposure and "whether to freeze or not to freeze."

The art of fine photography is a matter of good judgment. There are times when sunlight filtering through surf-driven spray is best caught by total stoppage of movement, but those instances are rare. Generally such exposures result in a frozen immobility that is devoid of the atmosphere of action.

Water, tossed into the air by diver or canoe, moves comparatively slowly. Its speed varies from nil at the apex of the arc to roughly 16 feet per second on the first upthrust. A shutter speed (on 4x5 plates) of 1/100 at 50 feet, 1/500 at 10 feet will stop the arching water drops without interfering with the impression of movement in the base of water sheets. The lines of motion flow together from the point of impact and suspense as pictured in the light-touched drops floating through the air. Note the flash of speed in "Action in Waikiki Surf".

The above is applicable, however, only to those shots where detail of face and figure is paramount, to scenics where delicacy of rendition is desired. There are compositions where the artist seeks impressionistic reproductions, where he would portray brute force. These require a different technique.

Seashore action photography is something that cannot be laid to rule. Once basic principles are outlined, it is largely a matter of experiment. This much can be said, however: Always stop a living model, and treat the sea from the standpoint of lightness and gaiety—almost stopped motion, or massive strength—slow shutter.

Filters

Harold Hedger*

EVERY photographer whether professional or amateur who believes that if a job is worth doing at all it is worth doing in the best possible manner, should possess a good working knowledge of the use of color filters, because at some time he is going to need such knowledge in the course of his daily work. For example copies of Blue Prints are in demand by builders and contractors; furniture manufacturers want pictures of their merchandise for the use of their salesmen; lawyers want

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documents, maps, etc., copied where different colored markings may have been made, the pictorial photographer will make a poor stab at his job if he loses cloud effects which could have been preserved by the use of the proper filter, and so on ad infinitum. At one time I looked upon filters with a kind of awe, as something complex and hard to understand, and I have met other photographers who have had the same feelings on the subject. This I believe is primarily because the fundamentals of light and color, quite simple when properly studied, had never been mastered from the ground up so that a foundation could be laid on which to build.

In this article I shall endeavor to present the subject as clearly as possible so that the operator will be able to readily solve for himself any color problem or combination of colors which may arise.

From the earliest times in the history of the great Art and Science of Photography, people have observed that when objects having color have been photographed, that the effect produced in the finished print which is in monochrome, is different from the interpretation produced by the eye and brain, when viewing such colored objects as they appear naturally. This is due to the fact that the human eye distinguishes contrasts in two ways namely by tone or color. Tone contrast such as black and white is easy to interpret and reproduce, the reproduction of color contrast while still a simple matter, depends upon the photographic method used to obtain the degrees of contrast desired in the finished print, and this will be dealt with later in proper sequence.

From the foregoing preliminary remarks it will be seen that the problem which confronts the photographer is to produce in monochrome, the colors of the original subject either in their correct relative values, or, any color in any relative value (or shall we call it brightness) that might be desired.

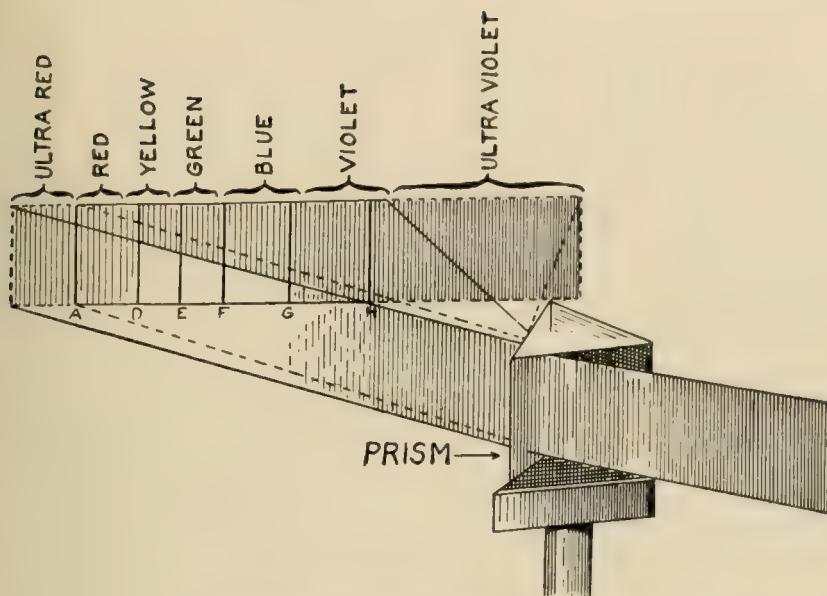
In the so called "good old days" and for our purpose prior to Anno Domini 1906 when panchromatic or color sensitive emulsions made their debut, photographers just didn't produce colored objects in monochrome in their correct relative values, or for that matter in any desired values, for the simple reason they did not have the tools to work with. The old photographic emulsions, which it will be permissible to call "color blind", were very sensitive to blue, violet, and ultra violet in order named, slightly sensitive to green and practically blind to red and yellow. So if our customer in those days should have been indiscreet enough to present himself for having his "pitcher tuk" in a white hat, red coat, and blue pants with a yellow tie thrown in for good measure, he would appear in the final result as an almost black and white object from head to foot, or in other words an untrue rendering of the color contrasts.

For a proper understanding of the use of color filters the reader must now be referred to the sketch showing generally by means of a prism how white light such as daylight of its equivalent can be proved to be made up of the many colors known as the Solar Spectrum, this fact having an important bearing on our subject. At the short wave end of the spectrum we have the ultra violet, invisible to the eye, but visible to the photographic emulsion, and beyond this is the X-ray that unknown quantity which science has put to such valuable uses. At the long wave

end there is the infra red, likewise invisible but when used in connection with both an infra red sensitized film and an infra red filter, this ray has been found to possess a power of atmospheric penetration far beyond the range of human visibility, in fact almost unbelievable in its scope. In proof of same it might be interesting here to mention the wonderful long range "shot" of Mt. Shasta from Lat. $36^{\circ} 38' 17''$, Long. $121^{\circ} 30' 21''$, a distance of 331 miles made at 23,000 ft. altitude by Capt. A. W. Stevens of the U. S. Army Air Corps, by utilizing this remarkable infra red ray. Many other interesting shots have been made by this means at distances of 75 to 100 miles showing objects clearly defined, so it would seem that nothing but altitude and the curvature of the earth's surface can limit the use of the infra red ray. Returning to the subject of sensitized film emulsions these may be listed in three general classes namely Ordinary, Orthochromatic, and Panchromatic, and these are the ones that the photographer will have to decide between in connection with the use of filters. The ordinary films are much like the old color blind films which have already been mentioned, and as stated being most sensitive to the blue and violet, there are many good uses for such a film in cases where tone contrasts only have to be recorded, and the use of a filter would be meaningless.

The Orthochromatic films are sensitive to all colors except red and we might also say orange-red and therefore like the ordinary emulsions, can be handled in red safe light for loading holders and developing. Panchromatic films of which several types are manufactured for specific uses, are sensitive to all colors and must therefore be handled in total darkness and developed by the time and temperature method. For a clearer understanding of the color sensitivity curves of the above named films the attention of the reader is directed to the following curve charts, a study of same will well repay the effort. The fourth chart showing the human eye color curve should likewise be of interest especially to anyone who drives an automobile, as probably many who do, have not realized why our road signs are painted black on a yellow ground in preference to any other color combination.

To summarize then, if it is desired to photograph an object having a color combination of red, green, and blue an ordinary film would not be the one to use, because the blue would appear much too light in the print, the green dark, and the red practically black. An orthochromatic film would give the blue and green both light and the red very dark, while the panchromatic film being sensitive to all colors seen by the eye comes nearest to rendering the said object in monochrome in correct relative color values. It might now be contended quite within reason, that a panchromatic film being as color sensitive as has been shown, would therefore make the use of filters unnecessary, and for many purposes this contention is correct, especially so if the colors of our subject are all fairly weak and no one in particular has to be eliminated or shown as white in the finished print. One reason for the use of filters with color sensitive film is for the purpose of subduing, correcting, or compensating for color such as bringing out white clouds against a blue sky. Reference



Dispersion of a ray of sunlight by means of a prism

to the panchromatic curve chart once more, will show you this type of film is more sensitive to blue than is the human eye, compared with red and green, therefore it will be obvious that our landscape view with the white clouds and blue sky must be photographed through a filter which will hold back some of the blue to prevent its registering on the film too strongly and thereby weakening the cloud contrast or color contrast which it is desired to preserve.

The other reason for filters is when it is desired to accomplish some special result such as the elimination of a color entirely, an example of such would be where red ink had been spilled on a sheet of black and white printed matter and it was desired that a copy be made in which not a trace of the red ink would show in the finished print. The reader should understand clearly how the color of an object is determined. Taking the case of the ink stain just mentioned we call this red when viewed by daylight or equivalent white light. The reason it appears red is because it reflects red light and absorbs other colors, in the same way that if we place a red filter over the camera lens the filter will reflect or pass its own color and absorb the other colors, in reality we are making the picture by red light, the reason for same will soon be explained.

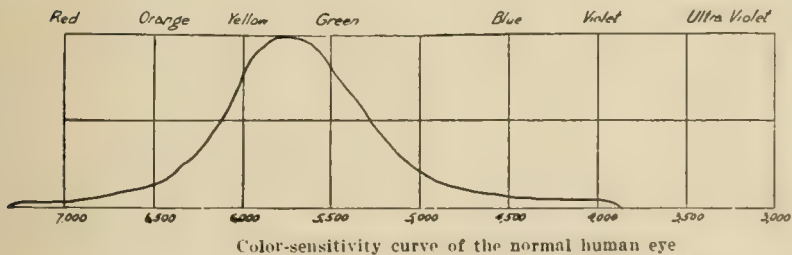
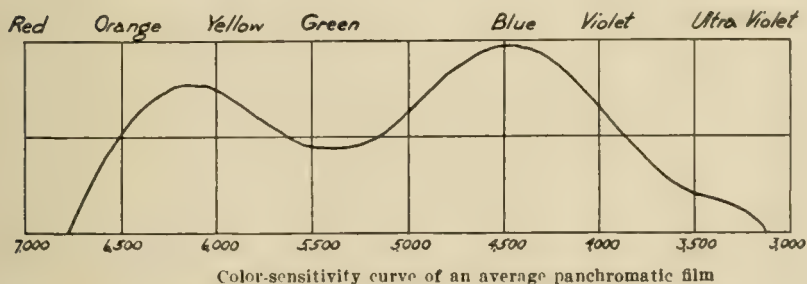
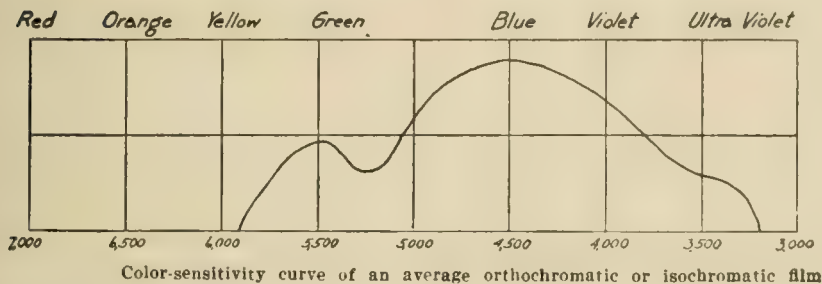
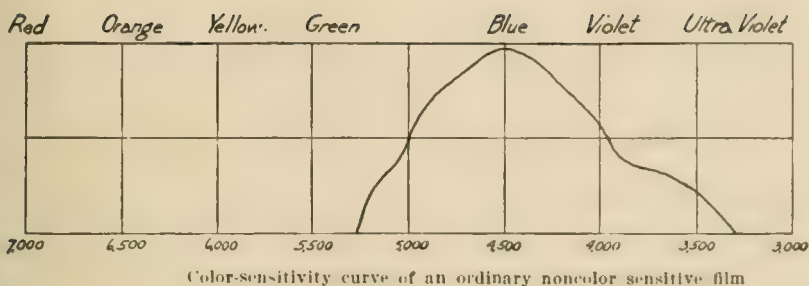
If the following little rhyme is committed to memory it will be of considerable assistance to the operator in selecting the correct filter to use for a particular job.

"There are three main colors—
Red, Green, and Blue;
Any one of these
Will absorb the other two."

Having thus memorized the rhyme, also bear in mind the fact that yellow absorbs blue, and most of your filter worries will be over. When we say that a filter of a certain color such as red, passes its own color, we mean that it lets red light go by and stops other colors which the rhyme says are green and blue. Now, if the red filter lets red light pass on through the camera to the sensitized film it will of course register on the film provided such film is sensitive to red, and this film on being developed will be dark where the red has registered, and therefore be white in the print. Being white in the print it will match the white of the printed page on which the red ink was spilled, with the result that the red stain will have disappeared entirely. Easy isn't it? All that is necessary to remember in removing the red ink stain is to use a red filter preferably a little deeper in color than the stain itself, and load the film holder with a panchromatic film because that film is sensitive to red. Let us suppose that the red ink stain had to be removed from a black ground instead of white. The procedure for removal will of course be different in this case and it will be necessary to use a filter which will absorb the color instead of passing it, in order that it will be light on the negative and therefore print dark to match the black ground. Referring again to the rhyme we find that a green filter will do the work because this color absorbs red, so that is what is meant when we say a filter of a certain color absorbs other colors.

It has already been stated that the eye distinguishes contrast either by tone or color. Tone such as black and white is simple enough to copy or reproduce and this is where the ordinary or color blind film comes in so handy. For example for copying line drawings Kodalith film can be used which gives excellent contrast for this kind of work and not being sensitive to red or even orange-red, it can be handled by the same light used as a safelight for bromide papers and the process watched closely. The reproduction of color contrast covers a much greater field and will depend on the photographic method used to obtain the degree of contrast desired to be shown in the finished print. Let us consider for instance a rose bush clustered with red roses surrounded by green leaves. To the eye the color contrast is pleasing, beautiful, and seems to be quite outstanding, however in reality the actual color contrast is very small, one color being relatively as dark as the other. Therefore to obtain in monochrome a print contrast to correspond with the visual contrast it will be necessary to use a filter that will render one color lighter than the other. In such a case it is advisable to correct for color towards the red, because the eye would be mostly attracted to the beauty of the red roses and we would then select an orange colored filter, which would allow enough of the red to pass to make the roses show up lighter against the green leaves, and so gives more closely the visual impression by increasing the color contrast. By using a deep red filter the roses could of course be made to appear as white like we have seen in the case of the red ink stain. This would be an untruthful rendering of the roses and technically known in the science of filters, as over correction of a color.

It is well known that there are many blends of colors, and for such as cannot be handled by the regular filters in general use, special filters



can be manufactured for any particular purpose, but a description of this is beyond the scope of this article. The reader should now be ready to be introduced to the commercial set of filters which will be divided into two classes namely:—1. Compensating. 2. Contrast.

The compensating filters are yellow, and light green, with orange red on the border line. The contrast filters are known as the tri-color set, red, green, and blue.

Compensating or correction filters are so called because they have the power of weakening certain color rays without completely absorbing them. In other words they pass the desired portion of all colors of the spectrum according to the filter selected to balance the color sensitivity of the film emulsion and make it correspond more nearly with the visual impression. These absorb some of the blue and violet end of the spectrum and pass the remainder of it, which is an important thing to remember.

Either of the above named classes of filters are used with Panchromatic films because these films are sensitive to all colors and there is no advantage in using any filter at all unless the film used is sensitive to the color transmitted by that particular filter

The compensating filters are described as follows:—

K.1. Very pale yellow. Use this where only slight correction is necessary and when the light is such that exposure time cannot be reduced appreciably. The exposure factors will be explained later.

K.2. Light yellow. Select this filter for all average cloud effects and snow scenes as it will absorb enough of the blue to give pleasing renderings without making the contrast between the blue and white too strong. It will absorb enough blue haze in landscape views to make it a very useful general purpose filter. Can be used to advantage with Orthochromatic films.

K.3. Strong yellow filter. This is now practically obsolete owing to the ever increasing use of the modern panchromatic films and their greater sensitivity to the orange and red end of the spectrum, as well as to blue and violet, which require the use of the filters next described.

X.1. Light green, for daylight correction of blue and red with Super Sensitive Panchromatic film, for example rendering a red brick building against blue sky and light clouds, by absorbing some of the red to which these films are quite sensitive and if not subdued might make the building appear too light. And as we already know that green absorbs blue and red, this filter will hold back enough of the blue sky to give pleasing cloud contrast too.

X.2. Darker green filter for same purpose as the above but used with artificial light.

G. Deep yellow. Used for greater blue and haze correction or where yellow stains might have to be removed in copying a picture. Also where color contrasts are in yellow such as golden oak furniture, to obtain greater showing up of the grain of the wood.

A. Orange-red. Used with panchromatic materials only, to obtain contrast in yellowish brown subjects such as mahogany furniture. Also

when strong blue correction is necessary, but not to make the blue appear as black.

B. Green. A strong filter to give green light and red and blue dark.

F. Deep red. Renders red as white and blue and green very dark. This filter is very useful for copying blue prints so they will appear in good contrast such as black and white.

C.5. Deep blue for photographing blue as white, and green, red, and yellow dark.

For aerial photography there are two filters most generally used, namely Aero 1, light yellow, designed especially for use when only slight filter action is necessary. The other is the Minus Blue, very deep yellow used when maximum haze elimination and good ground contrast or detail is required, such as would be for aerial mapping at high altitudes.

There is another filter manufactured and sold under the fantastic name of Sky Filter which is half yellow and half plain or clear. This filter is more imaginary than real in its alleged action, and prospective purchasers are cautioned against wasting their money on it specially. It is claimed that if this filter is placed over the camera lens with the yellow half uppermost, that it will hold back the blue of the sky and the plain lower half will allow the light from the weaker reflecting ground to pass through to the films unmolested. If it really accomplished this desirable result the laws of optics would have to be turned inside out, for it is well known that each and every pencil or ray of light reflected by an object must pass through every part of the lens to the sensitized film, and not through the lens on just its own little line of light.

Therefore while the sky filter does really filter the blue of the sky, its action nevertheless is all over the ground as well and it has practically the same action as if it were a totally colored filter instead of a half and half. Those who have a sky filter, may prove the above by turning the yellow half down instead of up, and the results will be the same, whereas this time the ground should be held back and not the sky. The whole thing is too absurd to need further comment.

The term "filter factor" means the number of times the exposure must be multiplied or increased when using any particular filter as compared with the exposure without a filter, because the filter used will absorb some light. As the factor may vary with each batch of emulsion of a given type, any attempt to list the various filter factors at certain amounts, would be more misleading than useful. It is usual for manufacturers of color sensitive films to furnish a printed card with each package of film listing the filter factors for that particular film, the attention of the operator is therefore directed to the manufacturers' card for the necessary information in this respect. For example if a certain filter has a factor listing of 5 it means that if the exposure was 1 sec. without the filter, it would be 5 seconds with the filter. When using any filter it is important that the exposure be accurately calculated, if not, much or all of the filter action and the good it will do, is lost, the rules of correct exposure are very necessary.

During the process of focusing the object on the ground glass, the filter should be in place over the lens, and if a very dark filter is being



*Color Blind Film—
No filter.*



*S.S. Pan.—
No filter.*



*S.S. Pan.—
K-2 filter.*

used such as the F. or C5 it will in some cases be found difficult to get enough light through to properly see the image. In such a case place the K.1 light yellow over the lens or a plain focusing glass the same thickness as the filter which can be bought for the purpose. After the object has thus been focused, remove the light color filter and place the one to be used over lens. A reasonably good idea of the action any particular filter will have can be obtained by viewing the object to be photographed through the filter. If for instance strong cloud contrasts are desired for pictorial effect, view the scene through all the filters from the K.2 to the A. orange-red, and select the one that gives the nearest to desired rendering, according to the blueness of the sky, and atmospheric haze.

Filters may be purchased in three types namely, Gelatin sheets, A glass Flats, and B glass.

The gelatin filters are the least expensive but there are some disadvantages to be considered in their use. First, they are very fragile and should never be touched with the fingers as they cannot be cleaned like a sheet of glass, and must be held between tissue paper while being cut to the proper size to fit the lens, which is no easy matter. This kind of filter is usually placed inside the lens, next to the diaphragm, where however it may become fouled with the diaphragm or shutter action. A safer place is in one of the air spaces of the lens, which in some anastigmats will be found immediately in the rear of the front glass of the front element. In this position the lens must be taken apart every time a change of filter is desired, a practice that has obvious disadvantages. "A" glass filters known as Flats, are optically plane, being ground and polished with the same accuracy as the best anastigmat lenses. These are cemented filters and somewhat costly but the finest possible work is assured by their use. A well known manufacturer now supplies this type of optically correct filter in solid colored glass, and these are particularly desirable inasmuch as they are not affected by heat or moisture. I might add that while on a recent vacation my K.2. filter of this type fell into the water. On being recovered and carefully wiped dry, it was none the worse for its immersion, whereas had it been of the cemented kind it would in all probability have been ruined, temporarily at least, until it could have been returned to factory for re-cementing.

education usually succeeds in dunking himself rather thoroughly in the solutions he uses, a pictorialist may be said to be "developed" in both senses of the term.

A pictorialist is simply a photographer who is capable of producing work of artistic merit. Under this definition it will be evident that the "purist" who is producing photographs of artistic quality is just as much a pictorialist as anyone else regardless of how intensely he may dislike the designation. The term is not a particularly happy one, and is confused enough without the further complication of having one class of artistic photographers who are pictorialists and another class who are not.

To further clear the ground let us understand from the start that as we use the term snapshotter in this paper, it means simply a beginner in photography. Not necessarily a beginner in point of time, but a beginner so far as his interest and aspirations in the medium are concerned. There is nothing of condescension in our use of this term for we must grant to each individual the right to be as absorbed or as indifferent to photography as he may choose.

Let us then trace the development of the photographer to the point where he *may* make a picture, hoping that by this means we may give some indication of the most desirable road to follow.

It seems to us that each pictorial photographer passes through three main stages in the course of his development. These we may call the snapshotter stage, the technical stage, and the stage of being a beginner in pictorial photography.

It seems obvious that there must be a very definite change in mental attitude as one progresses from snapshotter to pictorialist. The pictorialist's reasons for making a picture and the thinking which he does, or should do, in making a picture must be very different from that of the snapshotter, as we shall see in more detail later. It is important that this be fully realized for the failure of many a beginning pictorialist is due to the fact that he is trying to make artistic photographs by resorting to the mental processes of the snapshotter.

What are the characteristics of the three stages mentioned above? In the snapshotter stage the interest is concentrated entirely upon the making of personal records. Pictures are made of friends, of possessions of places visited, etc. The element of ownership or personal association is paramount. These pictures seldom if ever explain themselves and consequently their exhibition is accompanied by a running fire of comment. "This is a picture of *my* house taken on *our* wedding day." "That is *my* wife standing right in front of the pillar to the right of the steps." "That is *my* dog in the lower right." "He doesn't show up so very well since he was going the other way when I took the picture."

The snapshotter has no interest in photography as such. He takes pictures not to make photographs, but because he likes to have such personal records as those described above.

If the snapshotter develops some interest in photography he will probably begin to finish his own pictures, and he then enters what we have called the technical stage. He is completely absorbed by the marvels

of the photographic process. The fact that his finished result may be much worse than formerly is as nothing along side of the astounding truth that *he* made them. Any and every fault that is apparent in the pictures is readily excused by an explanation of the difficulties under which the picture was taken, or by the mishaps which occurred during processing. At a later date he begins to speak a learned technical jargon understandable only to the initiated and not always by them.

The technical knowledge which the photographer acquires at this stage is extremely valuable, provided that he thoroughly understands what he thinks he has learned and does not become inextricably confused in a welter of grains, gammas, and hyper-focal distances. The individual who becomes the victim of too much half-digested technical information is in the unfortunate position of being "unable to see the forest for the trees". He never makes a decent picture because he is constantly trying different formulas, different films, different papers, or different lenses with the result that he never learns how to use any of them.

No photographer is worthy of the name unless he has thoroughly mastered the technical procedures which he uses. As Mr. Mortensen has so ably pointed out in these pages the important thing is to simplify ones equipment and materials, adopt a standard and systematic technical procedure, and then stick to it.

We find our hypothetical photographer then, at the point where he is able to make good clean record pictures, an accomplishment which is surely a worth while end in itself. There are many individuals who find their greatest pleasure and satisfaction in making just such pictures and if such is the case they should by all means stick to record work. Far too often such people force themselves to attempt pictorial work usually because most of their photographic associates are striving toward that end. It is a great mistake to force oneself beyond one's true inclinations. Do what you like to do for that is what you will surely do best. It is unfortunate we believe that American exhibitions seldom give any attention to record work. Many of the English exhibitions have sections set aside for this type of picture. Such encouragement cannot help but result in the making of many fine record photographs of real historical or scientific value.

To continue our story, we find that some photographers hitherto absorbed in the technical aspects of photography discover a dissatisfaction with their work. They begin to feel the beauty in the work of the best pictorial photographers. They would like to make pictures that would be admired and exhibited as these are. Their own pictures which have previously been so satisfying now seem dull and uninteresting. In short our developing photographer has reached the third of the stages mentioned above and finds himself in plenty of hot water. A host of problems confront him. What subject matter shall he use for his first masterpiece? How may he learn composition— that mysteries of mysteries? Shall he be a "purist" or a "romanticist"? Is a design the same as a pattern, and what are they anyway? In the middle of the night our budding pictorialist breaks out in a cold sweat at the thought that he may be devoid of artistic talent, strongly suspects that such is the case,



"Florida Dunes"

Floyd A. Sears, A.R.P.S., F.R.S.A.

and wishes ardently that this mysterious ingredient might be diagnosed like appendicitis, or shot into the blood stream with a hypodermic needle. He is in a quandary. How is he to proceed?

Our illusions of grandeur have not yet developed to the point where we are prepared to say here is the formula for becoming a pictorialist. Our fondest hope is that this paper may help to eliminate wasted effort by indicating a road to follow. Let us analyze the four principal factors involved in the construction of a picture, and see how our budding pictorialist should proceed to deal with each of them. These factors are:

1. Subject matter
2. Idea
3. Composition
4. Treatment and technique.

Subject Matter

More often than not the beginner falls into difficulties at the outset by attempting to deal with subject matter that is beyond his capabilities. We have all seen a plentitude of shots of a photographer's hapless victim who has been persuaded to contort his or her features with great muscular energy. The resulting picture gives one the impression that the model has just swallowed a large dose of carbolic acid and it is ludicrously labeled "Grief", "Sorrow", "Horror" or "Fear."

An equally common error is the attempt to express an idea with

subject matter that cannot possibly fill the bill. Sweet, innocent fifteen year old school girls are given a generous application of lipstick and emerge from the darkroom as "The Vampire".

The difficulty in such cases is that the photographer is trying to do something which he does not understand. He has no conception of how to graphically portray the emotion suggested by the above titles, or he would recognize the feebleness of his interpretation before the exposure was made. Further in the cases mentioned above (which are very common) the beginner has attempted the most difficult kind of photography. Beginners should stay away from dramatic portraiture.

The subject matter to use at the beginning is the subject matter which you know most about. The things and environments with which you are entirely familiar. Sit down and analyze your personal interests, the environment in which you move the things you know well. This is your subject matter for the simple reason that you understand these things. The essence of picture making is to present a thing or idea in its most significant aspect. If you are not familiar with a thing or a scene how can you tell what aspect is right or best? For example, a student of fancy diving can tell instantly at just what moment each dive should reveal the greatest beauty of form, not only from the technical standpoint of the judge of diving but also for pictorial beauty. Further a person with a knowledge of diving would have a distinct advantage in photographing divers, because knowing before hand just what he wanted to show he would be able to anticipate the correct instant for tripping the shutter. Generally speaking the situation is similar for whatever you might wish to photograph. If you know that thing well, if you have repeatedly seen it in all its variations then you *know* how it should be photographed.

This does not deny that there is more than one way of "knowing" a thing. The technicians knowledge and the artists knowledge of the same thing are quite different. Obviously the *artist* need not fully understand a thing in the sense that the technician does in order to portray that thing effectively. But our budding pictorialist is not yet an *artist*, and for that reason it is important that *he deny* the above distinction. He should work first with the things he knows, almost if not quite, as a technician, so that it will be easier for him to learn to know them as an artist.

The Idea

By idea we simply mean what story, what emotion, what meaning is your picture to convey. The important thing is that your idea should be presented with the utmost clarity. Ambiguity is to be avoided at all costs. Here again we see that the beginner is greatly assisted if he is familiar with his subject matter for the idea grows directly out of the subject and is virtually dictated by it. At least the subject matter limits the number of different ideas that may be expressed through it.

Given subject matter with which you are familiar, the ideas which it is possible to convey through that subject matter should be immediately apparent to you. Imagine for example a bit of landscape that you

have seen repeatedly at all times of day, at all seasons of the year, and under all kinds of weather. It is evident that this same bit of landscape under different lightings and atmospheric conditions offers opportunities to portray nature in a variety of moods. These various moods that are possible with this landscape are the various ideas which you may choose to bring out with the given subject matter.

It might be well to bring out that our assumption that the beginner is familiar with scenes or objects in his environment means something more than a mere physical proximity to these scenes and things. He must have developed, to a limited extent at least, the power of observation. He must have cultivated the habit of looking for pictures in everything which he sees about him. The true beginner will not have progressed far in this direction, but again he can cultivate this faculty most readily by *first* directing his observation toward things with which he has some familiarity.

With the idea selected you then can readily visualize the position of subject or camera, the lighting, and all the other factors involved, which will serve to heighten the particular interpretation you have in mind. In short, because of your familiarity with this subject you can clearly visualize just how it should look in the finished print. When you can do that half your battle is won.

Composition

Once again we harp on familiarity. If you can visualize clearly just how your finished print should look to present the subject to the best advantage, your composition is made. Of course the beginner with no understanding of composition may not visualize as effectively as the experienced artist, but it is nevertheless true that an understanding of the subject will be a great help in composing the picture.

Composition is the arrangement of the parts of a picture so that they form a harmonious whole that is pleasing to the eye. It is not learned in the sense that one learns arithmetic. One simply develops a progressively finer appreciation of the subtleties of arrangement. Just as the person attending his first symphony concert is deaf to most of the subtleties of the music which give so much pleasure to those who are aware of them, so the beginner in composition cannot expect to see the finer adjustments of composition that are obvious to the artist. The student gradually develops a finer sensitivity within himself just as the music lover is constantly finding new beauties in compositions which he has heard many times.

Begin by reading a few standard works on composition. "Art Principles In Practice", by H. R. Poore, price \$4.00 is an excellent volume. Read all you can from reliable sources, read a variety of points of view, but read critically and carefully. The one great danger from your reading is that you may come to have a dogmatic reliance upon the so-called "rules" of composition. There are no such rules. The most important thing is that you keep your mind open so that you may develop a "feel" for good arrangement. Mr. Poore, for instance, lays down a number of basic compositional forms. Far too many photographers have read

Mr. Poore or some other writer, decided that they then "knew" composition, and straight away proceeded to condemn all pictures which did not happen to fit one of the basic forms which they had "learned". Such a procedure is nonsense. Composition cannot be judged by laying a mental stencil over the picture.

This reading is your ground work. It gives you a starting point only—a rudimentary understanding of basic principles. This ground work should be supplemented for many many years by a careful and critical analysis of many, many pictures, the best pictures you can find.

The writer has found the *careful* analysis of pictures to be of the greatest help. He used to think that he had carried out such an analysis many times, but when the requirements of his job forced him to write comments on the ten competition pictures which appear in this magazine each month he was astounded to find how superficial his previous study of pictures had been and how very much he learned in carrying out his task. Try conscientiously writing out comments on several pictures, do a painstaking job, and see if you do not have the same experience.

Your appreciation of what is right in composition will gradually grow finer. Practice ruthlessly with your own prints and be hard to please.

Treatment and Technique

With subject matter and idea selected, and our composition worked out we have now to decide what treatment the picture requires and what technique is needed to carry this out. By treatment we mean such things as the key of the picture (high or low), the strength of the contrast we desire, and the surface characteristics of the finished print. The treatment, it will be evident, must grow directly out of the subject matter and the idea and be strictly in keeping with them. A delicate flower subject would probably appear to best advantage in a high key, while a shot in a steel mill with massive machinery all about would obviously call for low key treatment. Here again familiarity with subject matter will keep the beginner from going astray, for this familiarity as we have pointed out before makes it possible for him to visualize the finished picture much more successfully than he otherwise could.

Technique then becomes what it should be, an almost automatic carrying out of the procedures which are required for the result in mind.

It would be well for the serious photographer to carry a note book in which he could jot down ideas and subjects for pictures as they occur to him. Ideas are illusive things and will surely slip away unless made secure at the time they come into being. Such a record has the further advantage of keeping the pictures you plan to make fresh in your mind. Then they can be mulled over at your leisure, refined and elaborated. It is a fine stimulant to always have something just ahead.

This is an introductory article to an extensive series for the beginner in pictorial photography. Those to immediately follow will be from the pen of Harold G. Grainger, A.R.P.S., a well known English writer, lecturer, critic and judge.—Ed.

Cinema Section

Edited by

William A. Palmer

Cutting Them Fine

LAST month we discussed a general editing procedure which has been found to make film finishing much easier and at the same time more complete. It was pointed out that, by "breaking down" a film into its separate scenes, storing the scenes in properly identified compartments, and then re-assembling the film in a new order which has been worked out on paper, one is more apt to eliminate all the flaws. Now we wish to continue further in the subject of editing and discuss some of the details of "cutting to the frame", some of the cases where cutting should be exact and one frame more or less is often important.

Camera Quirks

Many scenes in their unpruned state have camera imperfections which should be removed. These can be of several types. At the start of a scene there is often a frame or two which are overexposed due to the camera's inability to attain full speed on the instant. These light frames are easy to see in the film as it is rolled on the rewinds and should be removed as a routine practice. Many do not like to do this when the scene is already in the proper place, because it necessitates an additional splice. But let us repeat here with emphasis: *Good film editing requires many splices and an additional splice is always justified if it removes a flaw.* One should get a good splicer and use it with the care and precision on film operations that a surgeon uses with his instruments on surgical operations.

Often at the start of a scene, the picture on the screen will seem to "wave" in and out for a moment. This is due to the film, threaded in a camera which has lain idle for a few days, taking a set where it is bent sharply about film guides. When the camera is next used, the film buckles slightly in the gate, throwing the film in and out of the focal plane momentarily. Whenever possible, the few frames so affected should be removed. Of course, if there happens to be important action on these first frames, the "wave" must be left in. It is a good plan, though, to remember to run the camera for about two seconds after it has been lain idle, just before it is used again, in order to run the kinked film through the camera gate.

On the end of scenes, there are very often a few frames which are slightly blurred by jiggles of the camera as the operating button was released. Here again no mercy should be shown to the uncut film. Trade the jiggle for a splice!

Dead Ends

One is inclined to consider that a scene is a scene after mechanical imperfections such as those mentioned above are removed. But most careful cinematographers choose to shoot each scene a little longer than it is to appear in the finished product. This is only common sense, for one can always trim later. Thus there are usually "dead ends", at the beginning or ending of the scene, which should be removed. It may be an awkward pause before the action really begins or a tiring continuation that slows the tempo. In any case, the shears!

Long Shots To Close-ups

The most important characteristic of modern cinema technique is the freedom of the camera. It can move from one place to another to take in first a general view of a certain setting and then detailed views of the setting or action. The point of view can be shifted many times in a short period and retain an impression of realism completely. In fact most shifting of camera viewpoint in professional movies is accomplished without any consciousness on the part of the average moviegoer that the viewpoint has changed. The reason for this is that the professionals practically always choose some bit of action common to both viewpoints to serve as a tie between the two scenes. Thus in changing from a long shot of an actor, standing about to address others in the scene, to a close-up of the actor's face as he delivers his lines, there is a little bit of repeated action on the part of the actor that shows in both scenes as they are photographed. For instance, suppose the actor is smoking a cigarette and just before saying his lines, he takes a puff on the cigarette. The long shot and the close-up will be taken, the first ending after he draws on the cigarette and the second starting before this action. The cutter when assembling the picture will match the two scenes where this common action takes place and cut between the two scenes during the action. On the screen this cut will appear perfectly natural, for the start of the motion in the long shot will attract our attention to the character about to speak and the continuation of the same motion in the close-up will continue the natural flow. This is a very important principle of film editing of all sorts, vitally important in photoplay technique. Any little bit of action common to a long shot and a close-up will do, but they must be cut together so that the action in one scene is a continuation of that in the other. No harm will result if one or two frames of action are lost and the action continues with a slight omission. If the gap is not too great, the mind will fool us into thinking we have seen the complete action! Under no circumstances, however, should there be a repetition of the action in consecutive scenes.

From Left to Right

In cutting together a series of scenes showing a person or object progressing from one place to another such as an automobile bound for a definite destination, or a line of canned goods receiving their cooking and capping, or a person walking through the woods, there should be a uniformity in the

direction in which the person or object passes the camera field. That is, if the action in the first of a group of scenes shows the subject going from left to right, all the other scenes should show a motion from left to right in order to retain the illusion of the subject's continued motion to the same destination. To reverse the direction in two consecutive scenes indicates that the subject is returning to the starting point. It is not necessary to have any one direction such as left to right. Right to left is quite as good, but it must be consistently used. Of course, this is a point which should be thought of when the film is photographed, but if one has slipped up and made a series with the direction of movement alternating, we recommend that the scenes that are "off standard" (when one has decided which direction the motion should progress) be reversed from left to right in splicing, that is, jointed back to back. If the slight out of focus projection, that these scenes will have, is objectionable, they may be duplicated and then spliced in with the emulsions in the same direction as the "standards". Another point with regard to the cutting of a series of scenes showing progress is that two consecutive scenes should be joined so that the subject is never fully out of view. The first scene should be terminated just *before* the subject leaves the camera field and the second scene started just *after* the subject enters the field. How much of the action should be cut before and after leaving and entering the camera field depends upon the tempo. If the action is fast the cutting should be made four frames before and after those points where the subject is no longer in view. With slower action the cut should be two frames.

Spoken Sub-Titles

The spoken sub-title is used when the technique of silent movies becomes inadequate to tell a story with pantomime alone. It is an artificial arresting of the pictorial matter to give us the words we can see but cannot hear. This interruption, however, becomes unobtrusive if the title wording is cut in at the proper point. In fact the experience of Hollywood during the many years of silent films showed that properly used conversational titles completely lost their artificiality after the movie goer had seen a very few reels. After that a habit was formed and he was seldom conscious of the sub-titles presence. It is interesting to note that movie fans of years standing, who have not seen silent films for these several years of talkies, experience no difficulty or annoyance when again shown a story with conversational titles.

In the use of the spoken title there should always be photographed a close-up of the speaker saying the exact words of the title. It is better if the close-up is of the speaker alone, but the title may be placed in a scene including other characters if the action is such as to leave no doubt as to which person is talking. Then, in splicing in the length of title film bearing the conversational sentence (and here let us mention that it is very bad technique to include more than one sentence or thought in a single title) the scene must be cut at a point after the speaker has said a few words and his mouth is open. The title is spliced on and then the very last part of the close-up, starting with the mouth open, is added. Part of the close-up, while the character is in the middle of the speech, is discarded. In other words, the title length substitutes for part of the action. As an example suppose we are cutting in the following sub-title: "I'm going away for awhile." The close-up would be

cut at the point the character had his mouth open on the first syllable of "away", the title spliced on, and then the rest of the close-up, starting from the point where the mouth is open on the first of "awhile", is added. The part of the close-up during which the character pronounces "-way for" would be discarded. On a longer sentence the amount of action kept at the start and finish would be about the same and proportionately more action would be discarded in the middle of the speech.

It will be seen that the cutting in of conversational titles needs quite a little care and illustrates the expression "cutting to the frame" for in most cases the mouth-open positions are only a frame or two in length. These points are best found by inspection with a small hand magnifying glass. (The lens from the projector can be used). As one inspects a scene, in which a person is speaking a known line, the separate words and syllables can be recognized with surprising ease.

Questions and Answers

QUESTION: What causes scenes to go out of focus in projection?

ANSWER: A number of conditions can cause this difficulty but the most common are: 1. Dried, shrunk, or buckled film caused by improper humidifying will not stay in the proper focal plane as it goes through the projector gate. Film which has been dried out while unrolled (a common occurrence when film is hung up above a basket during editing) will be especially unruly. It is for this reason that we recommend that small lengths of film be kept rolled and stored in small compartments during the editing process. 2. Splicing original and duplicated scenes together on the same reel will cause the emulsion to change from one side to the other. When the projection lens is focussed for an original scene it will be out of adjustment for the duplicate. The obvious remedy is to have any one reel composed entirely of original or duplicated scenes and not intercut them. 3. A projection lens which is loose in its mount may vibrate out of focus. The means of holding the lens in position should be tight enough so that one can feel a definite firm resistance when manipulating the focussing adjustment.

QUESTION: How is reverse motion done with the ordinary camera?

ANSWER: Reverse motion scenes are made by the simple procedure of holding the camera upside down while shooting the scene. When the film has been processed, the scene is cut out, reversed end for end, and spliced back in again. With 8mm equipment, when the scene is reversed end for end, it must be spliced in with the emulsion transposed as if it were a duplicate. This will cause the scene to project slightly out of focus. (See above).



"Cactus"

Fred G. Korth

Advanced Medal Print

■ Mr. Korth has discovered a very interesting pattern in this subject matter, while his angle of view seems to lend excitement to the picture. The thorns appear rather mean and threatening when one looks directly down at their sharp points. It seems to us that this is a clever way of adding psychological effectiveness to a picture which would otherwise have to depend entirely on its interest as a composition for success. Those who are interested in some financial return from their cameras may do well to study the possibilities of creating all-over patterns for use on fabrics. We believe that Edward Steichen was the first to create fabric designs in this manner, and readers of Mr. Haz' article on Steichen will recall that he stated that it was now possible for the cloth manufacturer to print such designs directly on the fabric by photographic means. This should result in an increased demand for original photographic designs.

The present picture is perhaps too detailed and not sufficiently formalized for use in this manner, but it should serve to indicate that plant forms offer distinct possibilities for such work.

Data: 5x7" Deardorff; 24 cm. Xenar; 2 secs. at F: 32, on Agfa S.S. Plenachrome in D-76; by daylight; Agfa Brovira glossy in D-72. Not for sale or exchange.



"Walsh—Negro Poet" Dr. Max Thorck

**Second Award
Advanced Class**

■ This picture clearly reveals Dr. Thorck's great talent for bringing out strong emotional qualities in a face. There is much of sorrow in this brooding face but the thoughtful attitude suggests a resisting spirit that is far from despair. Each observer may read his own interpretation into this face, it speaks for the man's race as well as for the individual shown. For that reason we feel that a more generalized title referring to the race rather than the particular person photographed would be more appropriate.

It is difficult to work out a good composition with the head resting on both hands in this fashion, and we feel that the present picture is rather successful in that respect. The head is perfectly placed in the picture space, and the right arm is handled to perfection being terminated at just the right point. Some will object to the cutting off of the left arm.

Admittedly this robs that arm of all feeling that it is supporting the head. However to include the rest of the arm would ruin this composition so the present arrangement is to be preferred.

Data: 8x10" Studio camera; 18" Verito; ½ sec. at F:8, on E.K. Par Speed Portrait, in Gycin; Halldorsen Studio light; Paper negative on E.K. Opal G, in M.Q. Not for sale or exchange.

**Third Award
Advanced Class**

■ This picture may well serve as a splendid example of the fallacy of trying to appreciate pictures by applying the so-called "rules" of composition in an almost automatic or mechanical fashion, a habit which we feel is much too common in photographic circles. The "rule" addicts will look at this picture and reason thusly: 'A portrait; figure rather stiffly posed; surrounding objects too strong and distracting; therefore a poor picture.' Those who have learned to view pictures sympathetically, to allow the picture itself to make its impression upon them, will come to a much different conclusion. They will realize that this picture is in reality a Still Life with a rather formalized composition. Looked at in that spirit (the spirit in which the artist has worked) the above criticisms lose their validity and become little more than a confession that the picture was not "felt." Which is another way of saying that such an observer is insensitive to the subtleties of artistic expression. There is a long tradition in painting behind this sort of picture. It is evident that Mr. Jordan has borrowed from that tradition and there is no reason on earth for his not doing so. All artists borrow from the accumulated experience of the graphic arts, they could not possibly make a picture without doing so. At the same time it should be observed that Mr. Jordan has remained absolutely true to his medium, the print being technically excellent.

Data: 8x10" Studio camera; 16½" Goerz double anastigmat; Eastman Portrait Panchromatic in Pyro soda; print on Opal paper in M.Q.; 12,000 W. Mazda and Photoflood.

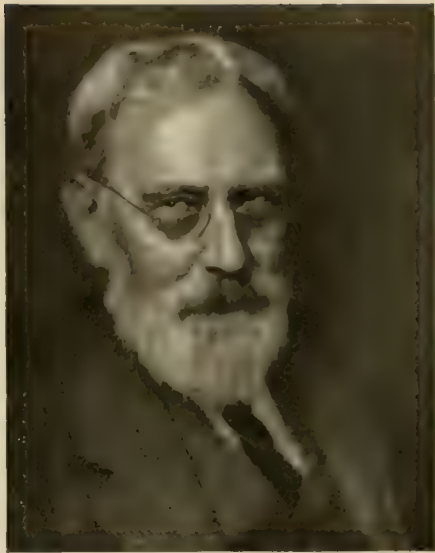


Stanley R. Jordan

Fourth Award
Advanced Class

■ Mr. Nakash offers a picture that is a fine example of really sound portraiture. We unhesitatingly accept this picture as a splendid likeness of the subject, but it is more than that. It also reveals much of the character behind the face, the kindliness of spirit, the tolerance and wisdom which the years have brought to this man. The most important message which the reader can obtain from this picture is that it pays to exercise restraint. There is nothing to cause an observer to remark "clever treatment", and thus reveal that he is thinking of the **photographer** rather than the picture itself. The great danger in using fancy lightings, unorthodox camera angles, and tricky sets is that they call too much attention to themselves or to the photographer. One looks at such a picture and thinks that that photographer would make a swell stage manager, and during this diversion of attention the subject of the picture is forgotten. Notice how delightfully the outline of the right side of the head, as we look at the print, is lost and found. This is a quality to which painters give much attention, and here is a good example of its application to photography. Such treatment helps to give the illusion of space behind the object, gives variation in outline, and relief from monotonously sharp edges.

Data: 5x7" Studio camera; Wollensak F:4.5; E.K. S.S. Portrait film, by one carbon arc light; projection print on E.K. Opal G, gold toned. Not for sale.



"Dr. Williams" George Nakash



"A Deserted Adobe" M. K. Curtis

heat of the desert region. The slight unevenness in tone in the sky at the upper left is an unfortunate technical defect in an otherwise exceptionally fine print.

Data: 5x7" Korona View; 12" single element of Turner Reich convertible; exposed at F:45 with 3x graduated filter; very bright sun in January; Agfa S.S. Pan. in D-76; Defender Velour Black S, in makers formula. 8x10" prints on 15x19" mounts may be obtained at the price of \$5.00 on application to **Camera Craft**.

Fifth Award
Advanced Class

■ We have often heard it said that the pure photographers technique could never bring out the emotional qualities of a landscape, primarily for the reason that too much irrelevant detail would be shown. The danger of such sweeping statements is disclosed by the fact that it is exactly that technique that has succeeded so notably in catching the emotional qualities of this landscape. We venture to say that a less exact photographic rendering would not be nearly as successful in bringing out the glare of the strong light and the extreme



"Pulleys"

J. K. Trafton

Amateur Medal Print

■ The success of this picture depends almost entirely upon conveying to the observer strongly the immense strength of this hoisting equipment. He must be made to feel imaginatively the almost unlimited pull that can be exerted by those wicked looking hooks. Mr. Trafton has achieved that end, surprising as it may seem, without including anything in the picture that gives an indication of scale. Perhaps because of the fact that there is nothing to indicate size the imagination is free to magnify this machinery to mammoth proportions. Ours seem to do so. Because there are many strong directional lines cutting the edges of the print we believe it would be a help to mount it with a narrow black border.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex; 1/10 sec. at F:16, on E.K. Panatomic in D-76, with "G" filter; Agfa Brovira Rough in Amidol. 11x14" prints on 16x20" mounts may be obtained at the price of \$5.00 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.

Second Award
Amateur Class

■ Mr. Dunlop offers a most attractive portrait, with lovely quality in the hair and beautifully delicate modulation of the face. It is unfortunate that the outline of the far cheek shows, just below the nose, for this rather spoils the beauty of the profile and gives the impression that the far cheek must protrude rather noticeably. If the head had been turned just a little farther this fault would be eliminated. As a matter of fact this cheek line could be retouched out without being missed and the picture greatly improved thereby. We would suggest trimming about one half inch from the base of the 8x10" print. Such trimming reduces what appears to be a slightly larger expanse of chest than is required, and has the further advantage of eliminating the short lines in each lower corner that mark the beginning of the arm-pits.

Data: 3¼x4¼" Graflex D; 16.5 cm. Zeiss Tessar; 1/5 sec. at F:8, on E. K. Panatomic, in D-76, by two 500 W lamps; Bromoil Transfer; Bromoil matrix on Defender Velour Black I in Amidol; Mortensen Bleach; projection control used in printing matrix. 8x10" prints on 14x18" mounts may be obtained at the price of \$10.00 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.



"Helen"

Van F. Dunlop

Third Award
Amateur Class



"Joyce"

G. A. Felix

■ Any photographer is lucky to have the opportunity to photograph such a charming little subject as this. Mr. Felix has not missed his chance. The pose is dainty and feminine, and although it is one which is more often used with adults, this young lady seems to take to it with perfect naturalness. The high key is nicely held, but one could wish for just a little more definite modeling. The bringing out of a very delicate highlight on forehead, cheek, nose, and chin would help surprisingly. It is entirely possible that these might have been obtained by prolonging the developing time.

We would like to see enough trimmed from the right and added to the left so that the head would be placed just to the right of center, rather than to the left of center, as it now is.

Data: 3¼x4¼" Zeiss Emerald; 6" Doppel Amatar F:6.8; 1 sec. on E.K. Portrait Pan. in Glycin, by photoflood; E.K. Opal T. in M.Q. 11x14" prints on 16x20" mounts

may be obtained at the price of \$5.00 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.

Fourth Award
Amateur Class



"Wind Design"

Eldridge Looney

application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.

■ The charm of this picture lies in the splendidly recorded snow textures, and the interesting configurations blown into the snow by the wind. The composition functions with a pleasing circular movement, all elements moving together nicely with the exception of one.

The shadow patch near the upper edge appears rather isolated. It is not tied in with any active part of the composition and for that reason appears as a disturbing part that tends to check the eye's movement through the whole. If this spot had carried over behind the trees, or down into the dark patch below it, it would then become a functioning part of the composition and the difficulty would be eliminated.

Data: 4x5" View camera; Turner Reich lens; 1/10 sec. at F:64, 9 A.M. in January on Defender X F Pan., in Glycin; Defender Velour Black DL in Amidol. 8x10" or 11x14" prints on 14x18 or 16x20 mounts may be obtained at the price of \$5.00 on

Fifth Award
Amateur Class

■ The important thing, of course, in photographing sculpture is to select a lighting that will emphasize and bring to life the interesting aspects of the work. It goes without saying that the point of view must also be chosen with care. Mrs. Stephens has shown good judgment in both respects.

It is interesting to note what is apparently the effect of the "A" filter in this picture. Observe how much darker the sky is in the upper left than in the upper right. Note also that there is a thin film of cloud in the sky area at the right. Now the "A" filter throws blue sky very dark and holds white clouds quite light in the print. In this case the thin film of cloud has caused the sky to photograph rather light even in the parts (notably the extreme upper right corner) where no clouds are apparent to the eye. This then becomes a rather peculiar form of over-correction which in this case is disturbing because it looks as if the print was falling off in tone in the upper right corner. Dodging in of that area, where clouds do not definitely show, to something near the tone seen in the upper left would improve the print.

Data: 6x6 cm. Rolleicord; 7.5 cm. Zeiss Triotar; 1/25th sec. at F:8, on E.K. Panatomic in D-76, with A filter; E.K. Vitava G, #2, in D-72. Approximately 8x10" prints on 14x18 mounts may be obtained at the price of \$2.50 on application to **Camera Craft** No exchanges.



"Royal Guard"

Ione B. Stephens

Monthly Competition

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: M. K. Curtis, for the East Bay Camera Club; Fred G. Korth and Dr. Max Thorek, for the Fort Dearborn Camera Club; George Nakash, for the Montreal Camera Club.

The following won points for their clubs in the Amateur Class: G. A. Felix, for the Camera Club of Ottawa; J. K. Trafton, for the Golden Gate Miniature Camera Club; Eldredge Looney, for the Omaha Camera Club; and Van F. Dunlop, for the Riverside Camera Club.

Contributing Clubs

Amateur Camera Club of Buffalo	Miniature Camera Club of Oakland (Cal.)
Appleton Camera Club (Wisc.)	Monterey Peninsula Camera Club
Bellingham Camera Club (Wash.)	(Pacific Grove, Calif.)
Calgary "Y" Camera Club (Canada)	Montreal Camera Club
Camera Club of Hawaii (Honolulu)	Omaha Camera Club (Nebr.)
Camera Club of Long Beach (Calif.)	Ottawa Camera Club
Camera Club of Orange County (Calif.)	The Pack Rats, (Pasadena, Calif.)
Camera Club of Richmond (Va.)	Paramount Studio Camera Club
Concord Camera Club (N.H.)	(Glendale, Calif.)
East Bay Camera Club (Oakland, Calif.)	Photographic Guild of Philadelphia
Ellensburg Photographic Club (Wash.)	Photo Pictorialists of Milwaukee
Everett Camera Club (Wash.)	Photographic Society of Bangalore
Fort Dearborn Camera Club	(India)
Golden Gate Miniature Camera Club	Photographic Society of San Francisco
(San Francisco)	Pictorial Photographers of America
Hartford County Camera Club (Conn.)	Riverside Camera Club (Calif.)
Hockaday Camera Club (Dallas, Texas)	Schenectady Photographic Society
Jamaica Camera Club (New York)	Taft Camera Club (Calif.)
Japanese Camera Club (San Francisco)	Telephone Camera Club of Manhattan
Miniature Camera Club of New York	Washington (D.C.) Pictorialists

Standing of Clubs

Large Clubs Advanced Class		Large Clubs Amateur Class	
Fort Dearborn Camera Club	14	Golden Gate Miniature Camera Club.....	15
Photographic Society of San Francisco	5	California Camera Club	4
Pictorial Photographers of America	4	Camera Club of Ottawa	3
Montreal Camera Club	2	Miniature Camera Club of Oakland	1
Small Clubs Advanced Class		Small Clubs Amateur Class	
The Pack Rats	12	Omaha Camera Club	4
Whittier Camera Club	3	Riverside Camera Club	4
Washington Pictorialists	2	Washington Pictorialists	4
East Bay Camera Club	1	Camera Club of Long Beach	3
		Calgary "Y" Camera Club	2

SUMMARY OF COMPETITION RULES

1. Open to all, amateur or professional, club member or non-club member.
2. Closing date 4th of each month.
3. Place technical data, club membership if any, selling price, and whether or not you wish to exchange on back of print.
4. No entry fees or blanks required.
5. Stamps must be enclosed for return of prints.
6. Full explanation will be sent free on request or may be seen on Page 46 of Jan. 1936 issue.

Editorial

An S.O.S. From Mr. Mortensen

The popularity of Mr. Mortensen's books and articles have resulted in his receiving a volume of correspondence that has grown to what may truly be termed "alarming proportions". Since the publication of "Pictorial Lighting" he has received an average of forty to fifty letters per week, most of them requiring quite lengthy answers. He has more than once been forced to hire a stenographer for several days running in order to take care of these letters.

As a consequence he looks upon the publication of his next book "Monsters and Madonnas" with no little trepidation, and fears that he will soon take to dictating letters in his sleep.

It should be understood that Mr. Mortensen finds this correspondence most interesting, and he is more than anxious to be as helpful as he possibly can to those who are studying his methods, but there must be a limit to everything. His time is already crowded, divided as it is between the conduct of his studio and his work as a teacher of photography. Even if his time permitted he could hardly afford to employ a permanent stenographer.

This then is a plea for mercy.

Please do not address Mr. Mortensen unless you feel that it is absolutely necessary. Many of the letters he receives have no connection with the material in his books. Do not write to him to ask his opinion as to the possibilities of obtaining employment in California, or to ask what camera he would recommend as several have. As promptly as his time permits Mr. Mortensen plans to write on those elements of his technique that have not as yet been discussed in his books. Therefore, be patient and refrain from asking him to write these future books over and over again in the form of letters.

Mr. Mortensen agreed to our suggestion that an editorial of this kind be published with great reluctance, and only after he had struggled heroically with hundreds of letters for several months. He hopes that his readers will understand and sympathize with his predicament.

Questions which do not absolutely require Mr. Mortensen's personal attention might well be addressed to us. That's what we are here for.

Association News

Combine Your Vacation With the 1936 P.A. of A. Convention

The 1936 convention of The Photographers' Association of America, to take place from August 24 to 28, inclusive, at the Hotel Stevens, Chicago, Ill., comes at just the time when many photographers will be ready to take their vacations. The end of August was selected as being cooler than dates of previous years although temperature will make little difference as the Hotel Stevens is air-conditioned throughout and the entire convention will be held under the one roof. For those who are coming from distances too long for driving, the new and decidedly lower railroad rates from all sections of the country will be an un-

expected economy, and we understand that when the new rates go into effect, bus rates will be proportionately lowered so they will still be considerably cheaper than rail.

Little of the program can be released so far. William Gerdes, New York City, Director of the Association's Winona School and only pupil of internationally famed Pirie MacDonald, Photographer-of-Men, is slated for a portrait demonstration. Mrs. Hillary G. Bailey, Indianapolis, Ind., already noted for her platform appearances at previous conventions, will speak on "Handling the Sitter." Talks on the program will be devoted almost entirely to business topics—how to bring business to the studio, and how to handle

it after it reaches the door. The best available talent from all parts of the country is being scouted for and in our next issue much of the program will be announced.

Entry forms are being prepared for the picture exhibit which will include five portrait classes and more than twenty commercial classes, with medals, ribbons and seals to be awarded in each. Photographers are requested not to write for entry forms as in ample time one will be mailed to every professional in the country. A large foreign exhibit is also anticipated.

The manufacturers will be out in force. As this is written, early in March, considerably more than half the floor space of the convention has been sold. All of your old friends will be there, most of them with new things to show, and many new firms will be represented. From present indications this will be the greatest display of equipment, apparatus and materials presented by the manufacturers in the past ten years. Their exhibit alone, with its opportunity for you to see and compare the purchases you have been

considering for your studio, will be worth the trip.

Don't make other dates for the last week of August. Come to Chicago and bring with you a list of the problems that have been troubling you. You will find plenty of people at the convention glad to help you. And the Chicagoans will welcome you with a big blow-out on the evening of the 24th—don't miss that!

Sacramento Convention, April 18 and 19

The convention sponsored by the Associated Photographers of the Sacramento-San Joaquin Valleys is going ahead with great strides, and promises to be a much larger meeting than was originally hoped for. Gus Hofmeister tells us that the U. S. Camera Salon will be on exhibition during the convention in addition to the regular print exhibit. The U. S. Camera Salon is made up of the original prints from the annual U. S. Camera, which means that this exhibition brings to the convention the prints of virtually every outstanding professional photographer in America. The complete convention program is given in our advertising pages.

Notes and Comments

Frank Marshall Moore Exhibits Candid Camera Shots in Chicago

Frank Marshall Moore, well known candid cameraman for the Chicago Tribune will have an exhibition of seventy-five of his most interesting pictures at the Colonial Art Shop, in the Palmer House, Chicago, Ill. The show will be open to the public from 9 A.M. until 9 P.M. April 5 to 12 inclusive.

Graflex Camera Club

On Saturday Dec. 14th, the Graflex Camera Club, organized last Oct., had its first hike at picturesque Durand Eastman Park, located on Lake Ontario which furnishes excellent material for a Camera Club. Ten members braved the wet weather, many pictures were taken and a good time was had by all. Mr. Gaylord C. Whitaker, one of the Clubs directors and Mrs. Whitaker entertained the Club after the hike.

At the Jan. 6th meeting of the Club, Mr. S. C. A. Schoenfeldt, A.R.P.S. gave a very interesting and illustrative talk on Graflex Photography.

The Modern Masking Method of Correct Color Reproduction. Published by the Graphic Arts Dept., Eastman Kodak Co., Rochester, N.Y. Obtainable from the company without charge.

In making plates for color printing by the various photo-mechanical printing processes a good deal of color correction is necessary principally for the reason that the pigments used in printing are not sufficiently pure in color. The best inks do not sufficiently absorb the colors they are supposed to absorb, and do not sufficiently reflect the colors they are supposed to reflect. At present most of this color correction is obtained by hand work and is dependent largely on the judgment of the operator. This 36 page

booklet describes the new Eastman Transmission and Reflection Densitometer, and gives a method by which all color correction can be carried out by strictly photo-mechanical means, each step in the process being controlled by measurements with the above mentioned instrument.

Contest

Camera-Craft, 673 Main St., New Rochelle, N. Y. a large Photo-Finishing organization (not to be confused with the Camera Craft Publishing Co., of San Francisco, Calif., publishers of this magazine) are now conducting their annual print competition. There are three weekly prizes awarded from March 16 to May 4, and three grand awards. Those interested are advised to write to the above address for the rules and an entry blank since lack of space prevents our giving those details here.

Henry W. Bennett, F.R.P.S.

It is with sincere regret that we announce the death, on February 6, at Ilford of Henry W. Bennett, editor, since the death of Geo. E. Brown in August, 1934, of the "British Journal of Photography" and joint editor of the "British Journal Almanac."

Henry Watson Bennett was born on January 31, 1860. He was a man of wide interests and varied capabilities.

Mr. Bennett's photographic career dates from about 1890, when photography began to appeal to him as an aid to illustrative drawing, at which he was expert, and it was again with the object of improving and standardizing his work that he undertook most of the research work for which he is well known. It was in 1890 that he joined the Royal Photographic Society, of which he was elected a Fellow five years later, and of which later on he was to be for some years a member of the Council. He was a prolific photographic journalist and lecturer, and his opposition to the Watkins factorial development system was the subject of many lectures between 1895 and 1900. For forty years he was Instructor at the Great Eastern Mechanics' Institute, and for many years also at the Northern Polytechnic. As early as 1892 he came very much to the fore with his investigations

into the relative capabilities of amidol and pyro, and his later work resulted in scores of formulae, notably a modified ammonium persulphate reducer and a combined toning bath for P.O.P. He was a great authority on carbon, bromide toning, lantern slides, intensifying and reducing.

His practical work centered mainly around architecture, on which he was a great authority, and technical engineering photography, at which as photographer to the Westinghouse Brake Co., he was extremely expert. He was a frequent exhibitor, and his numerous medals testify to the excellence of his work. As a judge, also, he was much sought after.

New Color Camera

Camera Craft is aware that those interested in three-color photography want their news of new developments in a hurry. The letter which appears below arrived just as we were going to press. We print it for the above reason and because of the importance of the announcement, even though the information is not quite complete. Complete information and the printed matter mentioned in the letter may be obtained from Photo Marketing Corp., 152 West 42nd St., New York, N. Y. Yes, the signature on the letter is the Herbert C. McKay, for many years Dean of the New York Institute of Photography, and well known photographic writer. He has now associated himself with Mr. Joseph M. Bing, in the importation and distribution of photographic equipment and accessories. The letter follows:

Dear Mr. Young:

I am sure you will be interested in a few facts about the latest developments in natural color photography, the Mikut Natural color system. The Photo Marketing Corporation is importing the new Mikut one-shot camera with a complete assortment of accessory equipment. The camera is unusually small, it weighs only 3 lbs. and is hardly more bulky than a postcard-size rollfilm camera. It uses glass plates and makes three color-separation negatives, each $1\frac{3}{4}$ " square, placed side by side on this plate. Definition, registration and separation are remarkably good.

Through the use of a special projector, pictures in full natural color are projected from a black and white positive slide. This permits quick and inexpensive reference for the convenience of the photographer, and also opens unlimited possibilities in the educational and lecture field.

The slides are printed at a single exposure in a special adjustable printing box. The projector, by an easily made alteration in the illuminating system, is converted into an enlarger which in turn makes possible the production of color prints which are registered accurately before the exposure is made.

From every point of view: accuracy, simplicity, economy and general satisfaction, the entire system is far in advance of any natural color system which has been offered heretofore.

I shall send you descriptive printed material as soon as it has been delivered by the printer.

Very truly yours,

Photo Marketing Corporation
Herbert C. McKay.

Pictures Wanted for New Annual

The Dodge Publishing Company announces a new photographic annual to be entitled "Amateur Camera," the 1936 edition of which will be published this autumn.

Amateur photographers, who are defined by the publishers as those not photographers by profession, are eligible contributors. There will be no limitation to subject matter or type of camera. The purpose of the publication is to preserve in permanent form reproductions of the finest work of the American amateur photographer.

Information regarding the volume may be obtained by writing the Dodge Publishing Company, 116 East 16th Street, New York.

Exhibits of Great Interest To Photographers At New York Museum of Science and Industry

Lack of space prevents our giving any adequate idea of the many remarkable instructive photographic exhibits now on display at the New York Museum of Science and Industry, just inside the Sixth Ave., entrance to the RCA Bldg. The

Eastman Research Laboratories have outdone themselves and Mr. T. J. Maloney, editor of U. S. Camera has a fine display of industrial and scientific pictures. These exhibits will be open at least through April. Take our word for it, you'll be glad you went.

Improved Britelite—Truvision Screens

The Motion Picture Screen & Accessories Co. of 526 West 26 St., New York, announces several major improvements in their De Luxe "A" Motion Picture Screen.

New ideas and materials are constantly investigated by this company with a thought to their incorporation in Britelite-Truvision Screens. It is this constant striving for ultimate quality in mechanical design, simplicity of operation and performance, that lends authority to their slogan "Perfection in Projection". They have, in conjunction with one of the leading textile mills of the country, so perfected the screen cloth that it will retain its basic white for a longer period and will continually project images with greater brilliancy.

A further improvement has been effected in the simplification of its operation, as the screen is now raised automatically and instantly by simply lifting it up from the box. These improvements are included in the regular price. The manufacturers will be pleased to send information to interested readers.

Speaking of Summer . . .

Fotoshop, Inc. of New York sends a timely note pertaining to the opening of the 1936 summer camp season. To the business or executive branch of camp management the Fotoshop points out that 16 mm. motion pictures of camp activities can be employed to interest prospective patrons; to counsellors and directors interested in actual recreation and programs it is opined that one of the most popular features associated with a summer vacation camp is the sound or silent movies made of the campees. In boys' or girls' camps the pictures made of the children shown to parents on their week end visits constitutes a living record that Junior is getting his money's worth of

attention and fun. The Fotoshop also maintains a department which rents whole features to camp managements. These subjects are in the best of condition; are added to almost daily and consist of complete shows, sound or silent. The rates applicable to camps are in a special folder which will be sent on request to anyone interested. Write to Fotoshop, 136-C West 32nd St., and see advertisement in this issue for announcements of special prices on films.

Willoughby Expansion

The progressive firm of Willoughby's, Inc., have just taken further steps to expand their facilities and increase their service. More than 6000 square feet of floor space is being added in the shape of an added floor and a built in mezzanine. An air-conditioning plant is being installed, greatly expanded facilities for repair work are planned, and particularly good news for the amateur is the fact that the walls of the mezzanine will become exhibition space for a continuous photographic exhibition. A slogan: "There's always a good show at Willoughby's".

Get This Pamphlet

For new ideas in lighting equipment and new ways to use it we refer the reader to the new pamphlet just published by Photographic Specialties, Inc., 129 W. 22nd St., New York, N. Y. This interesting brochure contains an introductory article entitled "Pictures . . . Painted in Light", by Herbert C. McKay. It also gives an unusually lucid explanation of the nature and uses of the three lights offered by the above firm. These are the Photo Flood Spot, the Foco Flood, and the Flex-A-Lite. Write for your copy today.

My First Ten Years With the Leica

Dr. Paul Wolff is universally recognized as the outstanding artist and technician in the field of miniature camera photography. The large book containing two hundred of his best pictures and text in which he describes his methods is therefore valuable both for the technical information it contains and for the beauty of the superbly reproduced photographs. It has come to our attention that many who would like to own the book are

under the impression that it is out of print. This is not the case. The price has been reduced from \$10.00 to \$5.00 and it may be obtained from your dealer or direct from the distributor, B. Westermann Co., Inc., 24 W. 48th St., New York, N.Y.

New Graflex Catalogue

This new catalogue will tell you all about the Graflex cameras, the Enlarger-Printer, and the Graflex accessories. But we warn you this booklet is dangerous for it conveys its information in such entertaining fashion, and shows so many marvelous pictures, (made with a Graflex of course) that you will surely develop a terrible yen for one of these cameras. If you must have one in spite of our warning write to the Folmer Graflex Corp., Rochester, N.Y.

Kemco Filmvisor

We feel confident that the articles appearing in our Cinema Section in this and the preceding issue, will convince all who read them of the importance of careful editing if the motion picture is to have a finished appearance. Appropriately enough a new machine now appears on the market which greatly simplifies the problems. This machine presents a brilliantly illuminated and magnified image so that the operator has no difficulty in following the action or selecting the exact frame to be cut. A simple system for marking scenes for identification is provided, and the machine may be obtained with or without a splicing unit as desired. In short this machine may be used to review, edit, splice, rewind, and clean your films and is offered at the remarkably low price of \$15.00 without the splicer, \$18.50 with splicer. A free booklet fully describing the apparatus will be sent upon application to The Automatic Electrical Devices Co., 347 East Third St., Cincinnati, Ohio.

New Photoscop

An improved model of the Photoscop, universal photo-electric exposure meter for Still and motion picture photography, has just made its appearance. Increased sensitivity has been obtained, the angle of admission has been adjusted so that

the meter is set to cover the most important part of the photographic field. The portion below the horizon is favored so that an excess of light from the sky does not falsify the reading. An ever-ready leather case is supplied from which the meter need not be removed. The "Reference Book for Photographic Exposure", written by Mr. Joseph M. Bing,

F.R.P.S., is an extremely helpful and complete guide to the proper use of photo-electric exposure meters. A copy accompanies each Photoscop, or the book may be purchased for \$.25 from Photo Utilities, Inc., 152 West 42nd St., New York, N.Y., distributors of the Photoscop. The same firm will gladly send you descriptive literature on the new meter.

Our Book Shelves

The British Journal Photographic Almanac, edited by Henry W. Bennett and Arthur J. Dalladay. Published by Henry Greenwood & Co., Ltd., of London. 696 pages, 4 $\frac{3}{4}$ x7 $\frac{1}{4}$ ". \$1.00 paper covers, \$1.50 cloth covers.

The long tradition and the continued excellence of this annual publication tempts one to nickname it the "Photographers Bible". Each issue contains a number of valuable articles, photogravure reproductions of about sixty outstanding pictorial photographs, a review of the years progress, a section on New Goods, a section on formulae, tables, chemicals, and miscellaneous information. In addition there is the very large advertising section which in effect consists of a complete showing of the photographic goods offered in England.

Adams Fifth Rib, by John Everard. Published by American Photographic Publishing Company, of Boston. 10x12" cloth bound, \$5.00.

This book contains a collection of 48 studies of the nude all by John Everard. The reproduction is in good quality photogravure so the pictures show up splendidly on the large page. Mr. Everard is an Englishman whose work has not been very widely shown in this country. He exhibits a considerable talent for handling the figure and many of his pictures have definite artistic merit. He is at his best when using the figure simply and directly. When he gets into rather unconventional and elaborate lightings he sometimes achieves a very striking thing and sometimes misses rather badly because the lighting throws the planes of the figure out of their proper relationship to each

other. He is at his worst when he attempts to imitate natural surroundings with interior sets, the artificiality of these sets being immediately apparent. "Siren" on page four is probably the worst example of this sort of thing. Fortunately only a small percentage of the pictures are of this type, so on the whole we feel that the book is definitely worth owning.

Photograms Of The Year, edited by F. J. Mortimer, Hon. F.R.P.S. Published by Iliffe & Sons, Ltd., of London. 8 $\frac{3}{4}$ x11", \$2.50 paper, \$3.50 cloth.

In the opinion of the writer Photograms presents the most representative cross-section of international pictorial photography to be found in any of the annuals. The superb reproduction quality and the large size combine to show the pictures to best advantage. The editor contributes a review of the year's work. Mr. C. J. Symes offers illuminating comments on the pictures shown, and there is a report on the status of pictorial photography from all countries where the art is practiced to any extent. It is pleasant to record that these reports appear to be uniformly encouraging.

The Year's Photography. Published by the Royal Photographic Society of Great Britain. 7x9 $\frac{1}{2}$ ". \$1.25 paper covers.

This book contains a selection of the best pictures from the annual salon of the Royal Photographic Society, beautifully reproduced in photogravure. A feature of the book which is to be found in no other annual is the section devoted to Natural History photography. Many of the most fascinating pictures in the vol-

ume are to be found among these studies of birds animals and fishes. Mr. Robert Chalmers, F.R.P.S., president of the society writes a commentary on the pictures shown. J. Dudley Johnston, Hon. F.R.P.S. reviews the lantern slides in the annual salon, Ralph Chislett, F.R.P.S., M.B.O.U., does the same for the Natural History section, while E. P. Davey, B.Sc. Ph.D., A.R.P.S. writes a brief article on Science and Photography.

Das Deutsche Lichtbild. Published by Bruno Schultz, of Berlin. 8 $\frac{3}{4}$ x11" cloth bound \$4.00.

This is easily the most beautifully made book among the photographic annuals. We have never seen better reproduction quality anywhere, and this quality is enhanced by the fact that the pictures shown are uniformly of the highest technical excellence. Only the work of German photographers is shown, and the more than 150 pictures included in the book each year have consistently brought home to us the fact that German photography must be conceded to be second to none. An English translation of part of the text contains an extremely informative article on some technical aspects of pictorial photography, by Heinrich Kuhn, as well as articles on the Din system, aerial photography, negative sizes, and the German photographic industry, by other writers.

World Beneath the Microscope by W. Watson-Baker. Published by The Studio, Ltd., London. New York: The Studio Publications, Inc., 381 Fourth Avenue. 7 $\frac{1}{2}$ x10, 16 pages, 80 plates in photogravure, cloth bound, \$2.50.

This is the second of "The New Vision Series" and is well worthy of place in the library of everyone at all interested in beautiful photography. The photomicrographs are by several British experts and include some superb examples of low power insect photography. Particular mention should be made of the Praying Mantis, Head of House Fly, Butterfly's Tongue, and Foot of Spider. The Leg and Foot of Water Beetle (*Dytiscus*), #21, taken on an infra-red plate, is an excellent illustration of the structural detail secured by using infra-red light on a dense brown specimen. Two photographs

of plant sections (#11 and #69) are excellent. The "Sunshield" Diatom, #10, and Arranged Group of Diatoms, #19, are exceptionally fine, but the other plates of diatoms suffer by comparison. Foraminifera and Radiolaria hardly warrant 13 plates in a general survey of the microscopic world such as this work, particularly when only one or two plates appear to be taken with polarized light. No magnifications are given, which seems a mistake, particularly when the book is intended to appeal to those knowing little of the dimensions of microscopic objects. In many instances the photomicrograph completely fills the page. It would have been much better to show the object in a circle as it appears when looking through the microscope, or at least have had a white border on each side of the photograph. The plates are in photogravure, the fine detail being exceptionally well brought out.

George H. Needham, F.R.M.S.

Burroughs Wellcome Photographic Exposure Calculator Handbook and Diary 1936. Published by Burroughs Wellcome & Co., of London and New York, \$75.

Keen amateur photographers will be interested to know that the 1936 edition of the 'Wellcome' Photographic Exposure Calculator, Handbook and Diary is now available. For many years this publication has been the constant companion of photographers at home and abroad and the information it contains is being daily called into service.

The contents of the Diary have been thoroughly revised, the Exposure and Development Factor tables having been brought right up to date. The value of the widely used 'Wellcome' Exposure Calculator has been enhanced this year by redesigning the Calculator disc to accommodate the new plates and films of higher speeds. This section of the Diary alone soon repays the cost.

The monographs on subjects of practical interest to photographers include those on development, intensification, printing, enlarging, toning, staining, color photography and infra-red photography. For the cine worker, a section on expo-

sure and development of cine films is included.

An excellent sample of a print very effectively treated with 'Tabloid' Toners and 'Soloid' Stains points the way to an increased use of this admirable technique for the production of photographs in natural colors. The method is a simple one and the range of effects limited only by the ingenuity of the user.

To avoid disappointment due to early exhaustion of publishers' stocks, readers are urged to lose no time in ordering their copies of the Diary. The convenience of this concise photographic annual and its wonderful value for the modest sum of only 75c are well known.

One Thousand Ways to Make \$1000.00.

Edited by F. C. Minaker, published by
The Dartnell Corporation, Chicago.
480 pages, 5½"x8½", cloth bound, price
\$2.50.

This is a volume of true stories—stories of how actual people discovered ways and means of making sizeable sums of money while they were out of a job, in their spare time, or how they developed a full time paying business. The suggestions are practical for the simple reason that they have all been successfully put into operation. There is no apparent effort to exaggerate the amounts of money that may be earned. There are five stories describing different ways of earning money with the camera. The writer feels that the volume is a splendid source of ideas for anyone searching for a practical way to increase their income. It should be especially valuable to students looking for a summer occupation. In each case the general policy under which the business was conducted is given, but no attempt is made to lay down the complete details of operation since this would necessarily vary considerably.

Photographic Enlarging, by Franklin I. Jordan, F.R.P.S. Published by the Folmer Graflex Corp., Rochester, N.Y.
224 pages, 7¼"x9¾", cloth bound \$3.50.

An exceptionally fine book. Mr. Jordan covers the subject of enlarging thoroughly and completely and tosses in a chapter on bromoil and another on artistic considerations for good measure. He

writes with a fine lucidity, gets to the point promptly and directly, and discloses a splendid sense of humor that makes the reading of the book a most pleasant experience. The sixty finely reproduced illustrations are all examples of good photography by leading photographers and add much to the value of the volume. Put this one on your "must" list.

Color Photography, by Robert M. Fanstone, A.R.P.S. Published by Pitman Publishing Corp., New York. 171 pages, 5½"x8¼", cloth bound \$3.75.

Here is a complete volume on color photography written primarily for the amateur. Because the author feels that the beginner should confine himself to one of the transparency processes upon taking up color work, the book places greatest stress on describing in very full detail the methods of working with such processes. However the making of three-color separation negatives and the principal methods for obtaining paper prints in color are also covered in adequate fashion. There are also chapters on color photography with the miniature camera, and motion picture photography in colors. The book is published as a second edition to the volume by the late Capt. Owen Wheeler, of the same title, but is so completely re-written and improved as to constitute a new and original work. In general it may be fairly said that the book is the best available for the amateur who desires to take up the study of color photography in any of its variations.

Press Photography, by James C. Kincaid. Published by American Photographic Publishing Co., of Boston. 282 pages, 6x9", cloth bound, \$3.00.

Mr. Kincaid has done a very thorough job in writing this book and it is difficult to think of any aspect of press photography that has not been carefully considered here. The author is a practicing news photographer, and speaks from a long experience in the work so his advice may surely be considered reliable. The book is made additionally instructive by the inclusion of a large number of pictures with outstanding news value, accompanied by captions which point out the news features of the picture.

Classified Advertisements

Rate 6 cents a word; minimum \$1.50 each insertion, prepaid.

OUTFITS FOR SALE

◆Graflex Series D, Kodak Anastigmat f:4.5, film magazine, cut film holder, 2 filters, tripod, carrying case, \$85.00. A-1 condition. H. B. D., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

◆Leica model F with f:2 Summar 50 mm. lens, everready case, excellent condition, \$145.00. Practically new autofocus Elmar f:4.5, 135 mm. telephoto lens, complete Direct Vision Finder \$60.00. H. H., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

◆Series D Graflex, f:4.5 Zeiss Tessar, case, cut film magazine, filters, sunshade, \$125.00. Elwood 5x7 Studio Enlarger, \$25.00. Both in excellent condition. Complete outfit \$140.00, no trades. G. E. F., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

◆Bausch & Lomb 6 3/4" f:6.3 lens in Optimo Shutter 1 sec. to 300th, \$21.50. E. W. Bassick, Jr., 77 Brooklawn Ave., Bridgeport, Conn.

◆Kodak Pupille, f:2 Schneider Xenon lens, "candid camera," case, range finder, two filters, etc., perfect condition, \$47.50. I. Sherman, 2715 Belrose Ave., Berkeley, Calif. Phone, Berkeley 1008.

◆5x7 View with lens, shutter, two film holders, 23" extension, \$35.00, box only \$21.00. Ica Reflex 8" anastigmat f:4.5, \$35.00, box only \$12.50. Voightlander 1a f:7.7, \$6.75. P. C. Premo. Clarke, c/o Camera Craft, 425 Bush St., San Francisco, Calif.

◆Model "F" Leica, Chrome finish, f:2 Summar lens, new condition, \$160.00 cash. J. C. Hamer, 700 Palm, Little Rock, Ark.

WANTED

Used A, C, D and E Leicas to trade in on new model G Leica. Write in for liberal trade-in allowance.

BARGAIN—F:4, 90 mm. telephoto lens, demonstrator..... **\$60.00**

Miniature Camera Shop

1600 Post Street San Francisco, Calif.

CLEARANCE SALE

Like new 2 1/2x4 1/4 Agfa Roll Film Camera F6.3 lens \$10. Like New Leica Model A completely reconditioned \$50. Like new 3 1/2x4 1/4 film pack double extension Goerz Tessar Camera F4.5 lens, Compur shutter \$30. Like new 5x7 Improved Seneca View Camera \$25. New 5 section metal tripod \$1.49. Post card size Graflex with Zeiss F6.3 roll film type, perfect \$19.95.

Complete line of Still and Motion Picture supplies and equipment. Free catalogue on Cine Film Library. Still bargains, Bulletin. Agents for Leica, Agfa, Eastman, Victor, Keystone, Graflex. Trades accepted.

MOGULL BROS., INC., 1944C Boston Road, N. Y. C.

OUTFITS WANTED

◆4x5 Speed Graphic with or without lens, give full description stating price and condition. Prefer one with compound shutter. Harry Prievert, Winona, Minn.

◆Speed Graphic with or without lenses; also Leica camera. Hal Harms, 148 No. Normandie Ave., Los Angeles, Calif.

◆Miniature camera with fast lens, prefer Leica model F or G. f:2 Summar lens; also miniature enlarger. Frank Pugh, 4537 Fair Ave., St. Louis, Mo.

STUDIOS FOR SALE

◆Good business in portraiture, finishing, and framing. San Francisco vicinity. Sell as is or remove part equipment. Will consider leasing. Z. C. W., c/o Camera Craft, 425 Bush St., San Francisco, Cal.

◆For Sale or Rent. Leading studio of Richmond, California. Sell for \$3,000.00 for lot and building, easy terms. Rent \$40.00 without equipment, \$50.00 with equipment. Large studio on best street. 5 living rooms in connection. Parker Studio, 1920 MacDonald Ave., Richmond, Calif.

POSITIONS WANTED

◆By man 35 years, 14 years experience in commercial, news, and speed work. Operator and finisher. Good promoter, personality, reliable, excellent references. P. R. E., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

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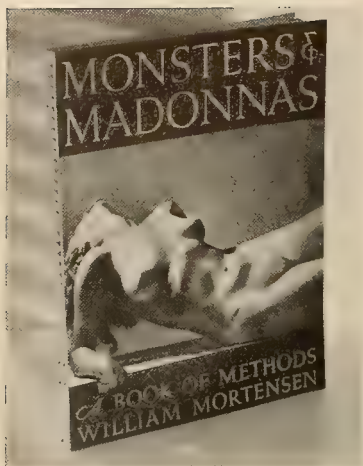
"Kameraden"

19th Los Angeles International Salon

Jeno Denkstein

1936
CHARLES KERLEE
HOME-MADE MORTENSEN LIGHTS

PRICE 25c
Paul Rodriguez
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Charles Kerlee: Honest Workman

Raul Rodriguez

THE merit of a man like Charles Edward Kerlee far transcends his mere skill as a photographer. As a photographer, Kerlee stands at the head of his profession on the Pacific Coast. As an artist and a craftsman he stands with the immortals of all arts and crafts. For he possesses, in common with the immortals, the one quality that distinguishes genius from mere skill; namely, Honesty—rigid, unswerving, uncompromising artistic honesty.

Artistic honesty is Kerlee's dearest principle, his greatest purpose, his only fixed rule. Utter contempt for subterfuge, flat rejection of all compromise, are with him overpowering manias. In his hands the camera does not lie. Trickery and "correction", which are the stock in trade of many a photographer, are anathema to Kerlee, to an extent that at times becomes distressing.

As an example, take the time Kerlee and I were out shooting a portrait of an airplane pilot *in situ*—in action at the controls of his ship.

The publicity man whose firm's plane we had borrowed was a most accommodating chap, and a bit of a photographer himself. He obligingly held up a plane that had just come in from its run, held the pilot and made a world of special arrangements for us. But when it came to turning the plane around to get the light Kerlee wanted, that simply couldn't be done, for it would be impossible to start up the plane's motors again without a great deal of difficulty.

"Use a reflector and shoot it with this light," urged our benefactor, aiming to please. "You'll get something plenty good enough."

Kerlee turned on him with an impatient gesture that was almost a snarl. His contemptuous glance did not fail to take in the camera in our friend's hand.

All he said was, "I don't want something just 'good enough'"; but the tone of his voice said "It may be good enough for you, you poor snapshooter, but what's good enough for you is not good enough for me"; and his tone said it so plainly that our friendly publicity man froze up in a huff.

The picture Kerlee is working on at the moment is, for that moment, the most important thing in the world to him. And the most important part of making a picture is the shooting. Kerlee is not content to compromise at the time of shooting, with the idea of later patching up his shortcomings in the laboratory. He is not in a hurry to snap his shutter and go on to the next shot. He will wait patiently, or push people around impatiently, until he gets what he considers the necessary conditions.

Besides rigid honesty, Kerlee possesses an active imagination and an unfettered mind that refuse to accept trite or weak presentations of any subject. He frequently voices the airiest scorn for "pretty-pretty" pictures, soft-focus shots, wishy-washy landscapes and prints which, to use his own words, "have no guts".

He sees every subject, every photographic problem, as something with vast dramatic possibilities, something vital that impresses the beholder on its own merits, without need of stunts or tricks to put it over.

Inevitably, Kerlee's forthright methods show in his prints. I have worked with Charlie a good deal, shooting the most varied subjects, from plain street scenes to fancy double-prints. I have yet to see a single one of his prints which did not somehow tell a dramatic, forceful story—a story that was impressive because it was true, and the beholder could not doubt it.

Consequently, Kerlee's advertising photographs are absolutely convincing sales documents. Look at a Kerlee fashion shot—whether it's a pair of shorts on a delectably-formed girl or a pattern layout of neckties and socks on a flat surface—and you feel that irresistible urge to go out and buy which is the true test of an effective advertisement.

Kerlee's technique, he says, is simple. His aim is to minimize the variables, to perfect one technique he can depend upon, then stick to it, eliminating all possible chances of error.

He uses only two cameras: a Series D 4x5 Graflex and a 4x5 Korona view camera. He has the back of his view camera fixed to take Graflex cut film holders, which saves time, trouble and extra toting.

On his view camera he has a nine-and-a-half-inch Voigtlander Heliar lens manufactured before the war. "The lenses they've been making since the war," he says, "are corrected to eliminate a flare the old lenses had when you shot in certain lights. But when they made that correction they destroyed the quality I like in them, which is that they seem to carry focus deeper, although they are not as critically sharp right at the point of focus as some of the modern lenses".

On the Graflex he uses an eight-and-a-quarter-inch Steinheil Cassar and a sixteen-inch Teletessar (telephoto). For wide-angle work he uses a four-and-three-quarter-inch Angulon on the view camera.

"I like to have as much of the picture as possible in sharp focus," he says. "If I can get all of it sharp I think that's great. If it won't all go sharp, I get as much as I can. At any rate, I don't want any part of it 'way out of focus.'"

He uses a Photoscope electric meter and only one filter, a 23-A



"Spud Miller"

Charles Kerlee

Wratten. Both his cameras being 4x5s, he naturally uses only 4x5 film—DuPont Superior panchromatic.

His negative developer is Acetone Pyro, the acetone being used in place of a carbonate. This developer works a great deal stronger than the ordinary solution, requiring a minimum of exposure. And here is one of the most interesting points in Kerlee's method: He exposes his negatives for the highlights only, leaving the darks to take care of themselves. Then, using the extra-strong Acetone solution, which is supposed to develop in 8 minutes, he develops his negatives from half an hour to an hour. This brings out his whites bold, pure and clean, at the same time leaving the dark spots as good, definite blacks. Every print, Kerlee says, should have somewhere in it a strong white and a strong black, using the full range of the paper. It is this bold method that gives Kerlee's prints that punchy, important, "gutsy" look they all have, regardless of how ordinary the subject may necessarily have to be.

He uses Defender paper and Amidol paper developer. All his prints, except those made for reproduction, are split-toned. Split-toning, he explains, is a partial toning in a regular sepia solution. The tone is not allowed to go deep enough to affect the blacks, but it does clean up the whites and adds contrast to the prints. Although, as he says, prints intended for reproduction are not toned, I have gotten very satisfactory half-tone results from his toned prints.

Practically all of Kerlee's prints are enlargements, made with a condenser enlarger, with seven-inch Goerz Dagor lens. His scorn of purists who won't touch anything but contact prints is as great as his contempt for tricksters. "The result is the important thing," he says. "If an enlargement gives you what you're after, it's not only all right to use it; it's the only thing to use. Technique and method are nothing but tools. There's no sense in tying yourself down to any hard-and-fast rule of that kind."

Kerlee is extremely careful about making his exposures, and his exposure method is quite as original as everything else about his technique. He gives his exposures just half the time the film calls for, stopping his aperture down as much as possible. Ordinary shots he makes at one-fiftieth of a second on the Graflex; for action he speeds up to one-one-hundred-and-tenth.

Having made his exposure, he develops the film very carefully. He uses pinacryptol green, a de-sensitizer, in his film developer and works by a green safe light, using a stronger-than-average bulb in the regular Agfa pan safe light.

About ninety-five out of every hundred Kerlee prints are absolutely unretouched. But he disagrees with purists who throw up their hands at the very thought of retouching. "If retouching is necessary to get what I want out of a subject, I don't hesitate to retouch," he says. "Of course I prefer a straight print, but sometimes I even make the exposure with the definite intention of retouching the negative. Just for an extreme example, the other day I made some portraits of Loretta Young. Miss Young had a tiny blemish on her cheek. I retouched it out because



Advertising Illustration for Bullocks-Wilshire

Charles Kerlee

that blemish isn't there all the time—it isn't a permanent part of Miss Young's face.

"On my portraits I always retouch out fine lines around the eyes and other imperfections which the camera picks up but the eye doesn't notice. Minor corrections of that kind I don't hesitate to make. I want to render the picture as it looks to me."

Kerlee uses no contrast paper. If a print looks flat he simply intensifies it.*

He prefers outside shots, not because of any preference for sunlight over studio light, but as a matter of business policy. He lives and works in California, where constant, dependable sunlight is one of the photographer's greatest advantages and greatest sales arguments against competitors from elsewhere. So naturally he wants to be remembered as an outdoors photographer able to deliver plenty of sunlight to his clients at all times of the year.

Kerlee's compositions are more notable for their virile originality than for their classic adherence to rule; in which they reflect his attitude toward all academic dicta. A photographer, he says, should know the rules of composition but should use them unconsciously, and should know when to ignore them, and how.

"Technique to a photographer," he says, "should be the same as spelling to a writer. He ought to know it well enough to forget it".

Another typical Kerlee pronouncement: "When I make a picture I don't try to please anybody but myself. It's useless to try to please everybody. If you follow your own convictions you'll at least get a sincere piece of work, something you can argue for instead of apologizing for. And if you have good taste your picture is bound to be better than somebody else's idea of how it should look."

"The only way to make a picture is the best way you know how. If conditions aren't right at one time I'd rather wait until they change. If for some reason I can't wait and I can't get a shot under ideal conditions I'll attack it from another direction. If the light is flat, I'll work for texture, or I'll bring out some other virtue of the subject so as to make an effective picture."

In making advertising photos Kerlee always tries to visualize every picture as a finished halftone on a printed page. He likes to have rough layouts of the advertisements for which the photographs are being made, he strives to compose and balance his pictures with due regard for their ultimate positions on the page, and he likes to make enlargements to suit the size of the intended half-tone.

*Mr. Kerlee uses chromium intensification. The procedure is as follows: All operations must be carried out in weak daylight or artificial light. Prepare the following solutions. Solution A: 10% solution of potassium bichromate. Solution B: hydrochloric acid diluted to ten times its volume with water. Bleach the print in the following:

	Strong	Medium	Slight
Solution A	10	20	20
Solution B	2	10	40
Water, to make	100	100	100

Rinse the print and immerse for a few seconds in a 5% solution of sodium carbonate, and then wash until free of coloration. Re-develop in Amidol leaving out the potassium bromide. This method may also be used to improve prints with an unpleasant color.—Ed.



Advertising Illustration for Mayers Co.

Charles Kerlee

He has no use for paper negatives or bromoil prints. These methods, he says, have no place in photography because they are simply weak attempts to copy painting or etching. Photography as an art, he says, has a certain function and certain qualities that can well stand on their own merits. He can't conceive of any subject which could best be rendered as a paper negative print. "If you want to get the quality of an etching or a painting, learn to etch or paint. Don't try to make photography do your work for you. The result is nothing but a bastard art-form without the merits of either photography or the other."

"Photography has certain functions which it performs better than other arts—rendering texture, for instance—and photographers should make full use of those advantages instead of deliberately throwing them away, which they do when they get to making paper negatives."

Kerlee used to do a good deal of portraiture, but he doesn't go after the business for the simple reason that it frequently means grief and is not as remunerative as advertising photography. "I won't flatter people," he says. "I insist on photographing them as they are and sometimes that isn't pretty enough, so they object and there's a disagreement." He has, however, made some very remarkable portraits, many of them outside shots, which he prefers to studio portraits.

His studio equipment is simple. For a studio tripod he uses a sturdy and flexible X-Ray stand. He also has a remarkable special tripod which he designed himself. It is made from aluminum tubing and the center-piece, as well as the legs, are adjustable. This ingenious machine gives him a range of from two and a half feet to ten feet, and has a pan and a tilt on the head.

He has what is called the Kerlee Spot, designed by Kerlee and sold pretty widely to the trade. This unit is simply a 500-watt spot with an extra long extension for high shots. The lights can be taken off and laid on the floor for low lighting.

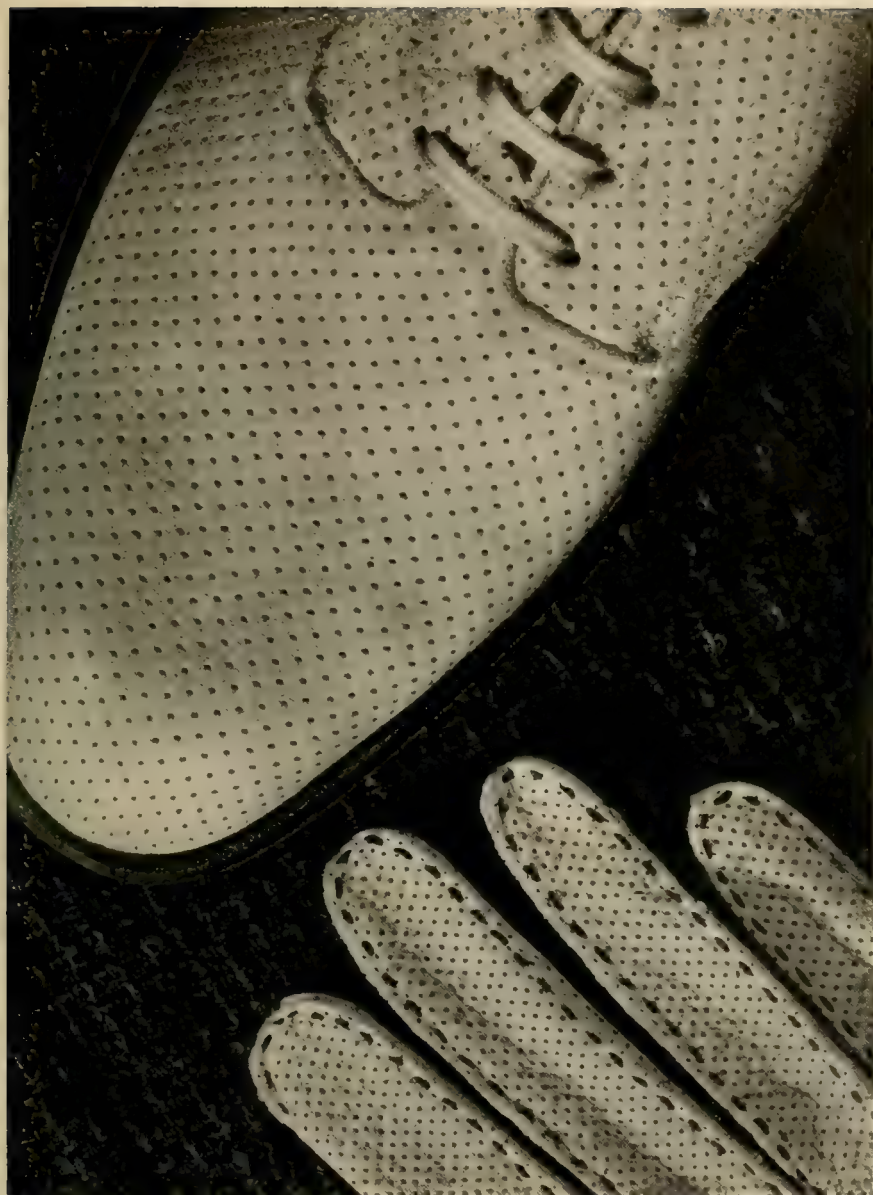
These few units, a couple of auxiliary lights and a white-and-gray background are about all he has. His equipment takes up so little room that his studio looks more like a writer's workshop than a photographer's. It is a very homelike sort of room, with a high, exposed steep-pitched ceiling, and is, in fact, the living-room of the Kerlee menage.

As a man, Charles Kerlee is rather a remarkable person, as the reader may have guessed. He is an immense, tall Viking of a man, very young-looking with his sandy complexion and rope-yellow hair. He perpetually wears sport-clothes: flannel shirt, slacks, suede shoes and never a hat or a tie. Scorning the proprieties and pretenses of the business world he refuses to dress up and makes important contact calls in his outrageous get-up. He wastes little time trying to impress people. In fact, he seems to try to impress you with the fact that he isn't trying to impress you. He won't buy a new car, dreading the swank, and goes about in a battered old Ford, which he drives like mad.

His one overpowering passion is sailing. He recently bought a new boat, which he had shipped over from Norway, and on the two nights preceding the day he unloaded it, he slept a total of about three hours.

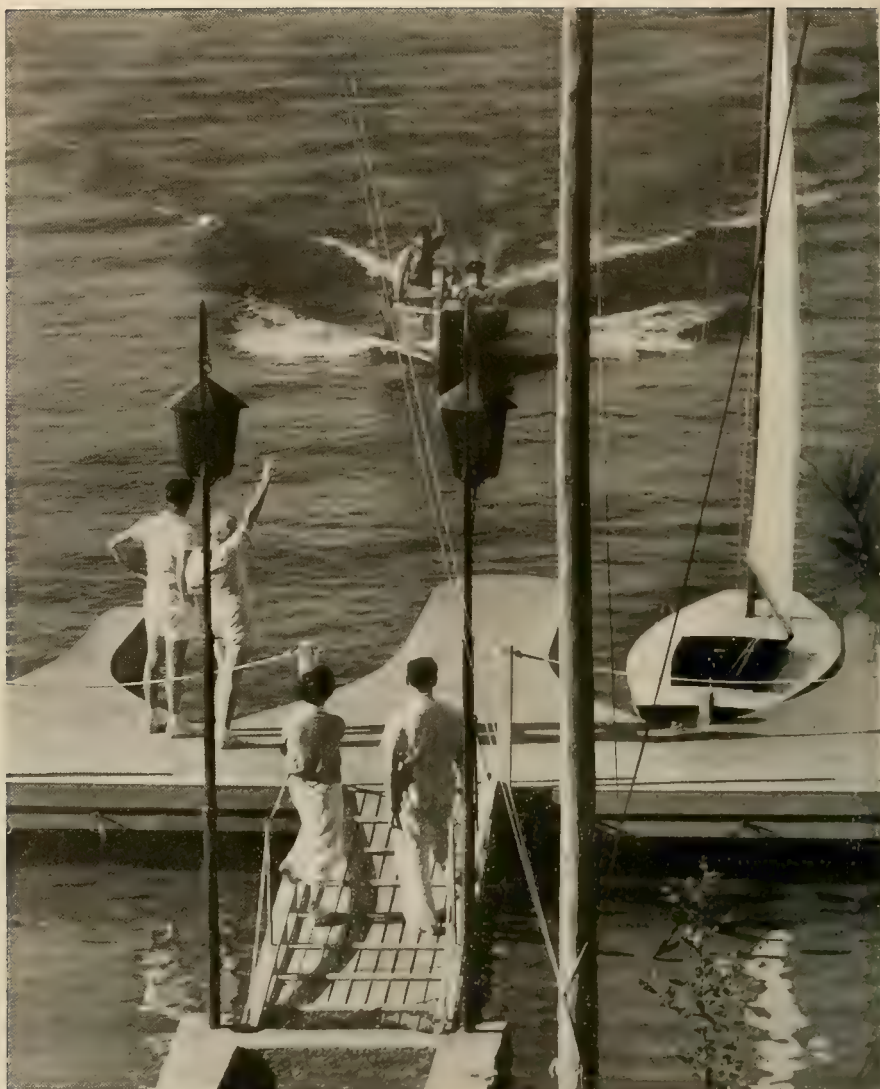
Aside from his work, which keeps him quite busy, Kerlee teaches classes in portraiture and advertising photography at the Art Center School in Los Angeles, where he himself studied photography, layout, drawing and advertising. He hopes, he says, to study painting, for he wants to learn more about color.

Kerlee started out to be a lawyer. While struggling with his pre-legal training at the University of California, he conceived the desire of getting into the motion-picture business—the working, not the starring end.



Advertising Illustration for Bullocks-Wilshire

Charles Kerlee



Advertising Illustration for Lord & Thomas

Charles Kerlee

He took every course he could find in technical cinema—which wasn't many. Then he began a very eventful career among the motion-picture studios, holding down one technical job after another, getting fired from most of them. Meanwhile he was puttering with still cameras, and finally decided to take up still photography as his career. Success was slow, which is usual with an artist as sincere and uncompromising as Kerlee. But his determination to put himself over on the sheer merit of his work alone has won over the handicaps he himself sets up, with his rigid and sometimes unreasonable scorn of the amenities.

Home-Made Mortensen Lighting Equipment

V. Pokorny

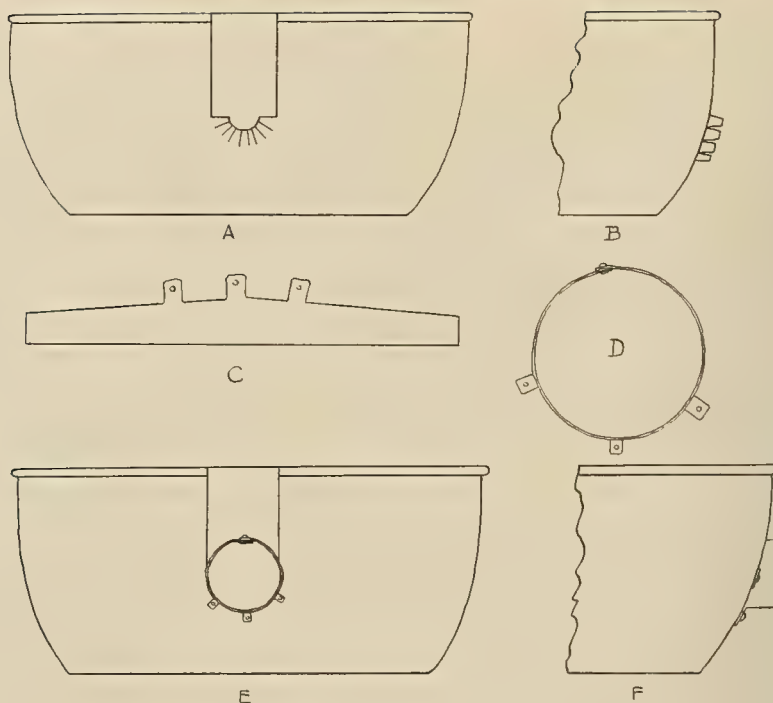
This article has been read and approved by Mr. Mortensen.—ED.

THE two-unit lighting equipment used by W. Mortensen—as described in his book on “Pictorial Lighting” with the method he employs to obtain the many effects in portrait photography—is about the simplest and most efficient one anybody could possibly wish for. To the average amateur, with only an occasional use for this kind of photographic accessories, it means the last word in every respect. I am convinced, especially in connection with Mr. Mortensen’s book.

The equipment can be purchased in most photographic supply stores for a reasonable price, but I made by own for the simple reason that I couldn’t get just what I wanted and when I needed it (I wanted to use it the next day) in the supply stores in our town. Two standards with reflectors and a white background 77x98 inches cost me \$5.00 and three hours of work, including the time spent on shopping trips to the “five and ten” and other stores. Here is how it was done:

The two standards were secured in a music store. Two-section music stands were bought for \$1.00 each. These usually sell from \$1.25 to \$1.50, but I didn’t need and didn’t take the collapsible table tops that serve to hold the music sheets, hence the reduction in price. In the ten cent store two lamp sockets were bought with built-in forked clamp bases, that include cross screw and winged nut, for 20 cents each. These, without any alterations, fit exactly over the similarly shaped stem tops of the stands, which too have fork-like clamps with holes that connect onto the collapsible tables. Most of the music stands of all kinds of makes have this connection arrangement, so anybody can buy them anywhere; and of course, the lamp sockets with fork-clamp bases likewise. For wiring rubber covered wire was used, which sells 3 feet for 5 cents.

Next came the reflectors. These were found also in the ten cent store, on the cooking utensil counter. Two aluminum pans were bought,

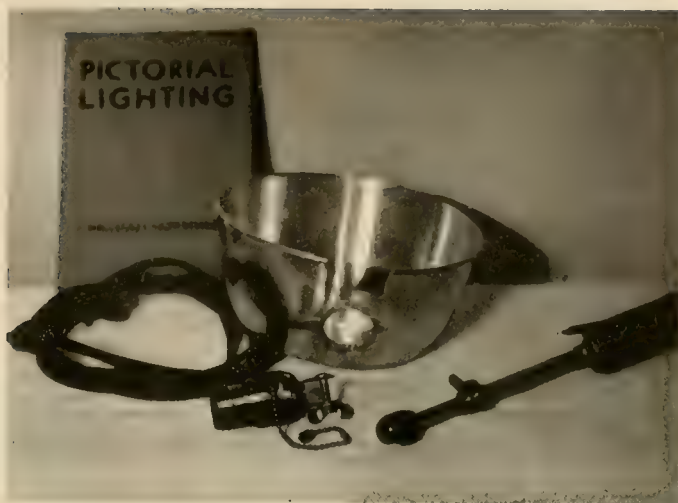


Explanation of Drawing

(A) cut-out slit for lamp socket in the side of the pan. (B) side view with bent out tabs. (C) tin strip for ring. (D) finished ring. (E) ring riveted in position. (F) side view.

9 inches wide and 5 inches deep, for 15 cents each. The handles were removed by filing off the outside heads of the three rivets. Right above the rivet holes the rounded up rim of the pan was filed through in two places, and with ordinary scissors a strip of the side, as wide as the diameter of the lamp socket (about one and a half inch), was cut out, reaching to the center of the side, where the slit in the middle of its base was rounded up into a semicircle of one inch diameter, leaving an edge one quarter of an inch wide. Into this semicircle edge eight cuts were made running outward, thus dividing it into nine separate tabs, which were bent outward in an angle of ninety degrees. Then the lamp socket was inserted and the tabs were pressed against its center part (the widest section), so that a perfect, snug fit was secured. All these operations are very easy to perform, the aluminum being not thicker than $\frac{1}{64}$ of an inch.

Now out of a piece of white tin, the kind used for food stuff cans, a strip was cut, five and a half inches long, three-eighths wide at both ends and five-eighths in the center, one side straight, the other tapered, with three tabs left on the tapered side in the middle third of its length. This strip was bent into an approximate ring with the ends overlapping, and the three tabs were bent outward in a ninety degree angle. The ring was set around the protruding semicircle tabs on the outside of the



The Lamp Before Assembly

pan, with the center tab pointed to the bottom, then the lamp socket was inserted again and the ring shaped tightly around its center section, the three tabs made to lay flat on the side of the pan. After marking how far the overlapping end of the ring-forming strip reached, the whole thing was taken apart, and using the mark as guide, the ring was closed permanently with a small rivet (or it can be soldered). Then holes were made in the tabs, marked on the pan with the ring set in the proper position, and same kind of holes were made on the marked places in the pan. A drill, nail or other pointed tool can be used to make the holes, with the material resting on a wooden support. The sharp edges can be dressed with a file or sand paper. The holes shouldn't be much larger than the rivets, which can be aluminum, copper or iron. To solder the ring to the pan is impossible, the pan being aluminum.

After riveting the rings to the pans, I had two reflectors ready for use. They are slid over the sockets before the bulbs are inserted and sit securely, as the rings are made to fit the sockets tightly. The forked clamp and screw arrangement between the lamp socket and the stem provides for a tilting movement of the head. The two-section feature of the stem allows height adjustments from 35 to 53 inches, with the standard on the floor.

The simplest standard I saw listed in the catalogs sells for \$3.95 plus postage. Mine costs me complete, every little item purchased and included (except the lamps), \$1.65 each. They look neat and quite professional, serve the purpose perfectly, and I had them ready when I needed them. My working bench was the darkroom table, the tools used were the kind we keep in the door pocket of the old Ford.

An amateur photographer in the course of pursuing his hobby has to devise many things to make the hobby fit into his everyday life and household affairs. Lucky are the few who don't have some sad experiences from the days of spirited hunting for a corner in the house, which



The Assembled Lamps

could be made into a half decent darkroom. Some of us succeeded, some didn't. Still many a shutter-clicker has to wait far into the night for the family to retire, to be able to convert the bathroom into something resembling a darkroom. But it so happens, that I don't know anybody who could afford to rig up a room permanently as a private studio. Temporarily we all do it every once in a while, usually with results more or less disappointing. And the cause of disappointment, sooner than not, is a faulty background. Cardboards, window-shades, draperies or patternless wall paper used for backgrounds, can save the situation now and then—but alas—where to get something dead white, of an 8x10 foot area, as recommended by Mr. Mortensen? Here is my way out:

A blanket was bought. A white, light-weight cotton blanket 77x98 inches, for 95 cents. The lumber yard provided two poles 2 inches thick. After the blanket was ironed, two sides were nailed one to each pole, using carpet tacks spaced one inch. Between the poles the blanket stretches flat, wrinkleless, and can be hung up on the wall. After the sitting it is rolled up window-shade-fashion and stored away. A linen pull-over cover can be made to keep it clean. The blanket having the thickness of a double-thread turkish towel and short-fuzz surface, renders the background ideally. My studio is now every what-have-you-room in the house, and I can transfer my lighting equipment and the background any place in or out of the house.

That's my home-made Mortensen lighting equipment. As for the method used in lighting, you'd better read his book "Pictorial Lighting".

Pictorialism

For Beginners

Harold G. Grainger, A.R.P.S.

Part II. "The Part Is Greater Than the Whole"

AMONGST photographers who earnestly endeavour to produce results worthy of approval by art critics interested in paintings, sculpture, or other of the higher forms of personal expression, the truth of the title of this note is already fully appreciated. Indeed, it is no exaggeration to say that the ability to select a choice section from the whole of what appears on a negative is not only fundamental to progress in the study of art, but imperative if acceptance at the better Salons and Exhibitions is the aim. Carried out with knowledge of essential principles it means the concentration of interest by the elimination, or at least subjugation, of features which detract from the pictorial presentation of the portion that matters.

The illustrations of the landscape subject "A Castle of Romance", "A", a print from the whole of the negative, and "B", a selected portion, quite definitely demonstrate the truth that "the part is greater than the whole". Examination of "A" shows that too large an area is occupied by foreground material that is not only uninteresting but, worse still,



A—The Whole of the Negative



B—First Trimming



C—The Completed Picture



D—The foliage in the top right corner was added to print "C"

because of its bulk and prominence, unfortunately dominates the subject. It is obvious that the real interest in this scene lies more to the centre, the ruins of the time-worn Norman castle surmounting the steep hill falling sharply to the river; and the reflections of its towers in the stream below.

Trim away non-essentials at each side and the picture begins to take shape. The balance, it will be seen, is already superior in the upright composition; and one can trace "lines" — Hogarth's lines of beauty—leading unmistakably from the foreground to the castle above. There is, however, a disappointing lack of balance and interest in the top right corner; a weakness that seemed to call for something more than cloud forms. This emptiness was overcome by the addition to print "C" of part of the foliage from the negative of a view of the castle, illustration "D", from another standpoint. A further, and final addition to print "C" were cloud forms from a separate negative which fulfilled all requirements obligatory in successful combination printing. These comprise similarity in direction of lighting in both negatives, weather conditions, time of day and year, and coincidence of horizons. Without these



E—Clouds added to print "C"



F—The whole of the negative



G—The portion
selected for
the picture

the result would, of course, be lacking in harmony and therefore fail to convince not only as an essay in art but, equally important, as a naturalistic representation of the subject.

How the cloud forms were introduced from a separate negative may, with the editor's consent, form the subject of an article in a subsequent issue. I may say however, it is a particularly easy and effective method which lends itself admirably to correct blending of tones from the two negatives.

The positive gain in effective presentation of subject by concentration of interest is also shown in the comparative illustrations "F" and "G" respectively of a remarkably fine example of the sculpture of the Decorated period, (1250-1400). This foliated, canopied recess, resembling a tomb receptacle in an old church was employed, about six centuries ago, as a permanent side-board or *beauffet* by the then owners of the (now ruined) castle of Harewood which stands in the grounds of the Yorkshire home of the Princess Royal. Occupying a position near the dais in the massive south wall of the 54 ft. x 29 ft. banqueting hall, a graceful leaf moulding runs under the projecting shelf; the richly ornamented canopy being borne on side-shafts, whilst at the back is a slit-opening.

Taking into consideration the fact that the sideboard is obviously the dominant interest the flights of steps on each side leading into the open air and, in addition, the incidence of brilliant sunshine in two areas, by causing a confused effect disturbs the harmony which belongs to successful picture making. On analysis the panel view of the sideboard alone is the better of the two renderings; for only by rigorous trimming can the beauty of the exquisite craftsmanship of the 14th century sculpture be appreciated.

Facts & Foibles

In Photography

H. C. Benedict, Ph. D.

No. 2. Manipulation of the Exposure Scale of the Paper

IN THE previous issue of CAMERA CRAFT, the well known fact that the paper chosen for printing must fit the negative with respect to scale was emphasized and the basic principles were outlined. It was further brought out that the scales of subject, negative and paper are interdependent, and must be carefully controlled for optimum results. In the average subject the scale is not under control. It is true, that we may use reflectors, diffusers or filters in sunlight and that artificial lights may usually be altered at will, but these exceptions do not constitute the average scale of the negative or paper or both.

The matter is most logically taken up out of the chronological order, i.e., paper then negative because the usual attempt is to fit the paper to the negative rather than the reverse. In the contact paper lines, four to six grades of contrast are usually obtainable, or to use the preferred expression, four to six papers of different exposure scale. It would seem axiomatic that the manufacturers would not go to the trouble and multiple expense of making several grades of paper if a manipulative method were available which would materially alter the scale of the paper. Even the enlarging papers are usually obtainable in several scales. This fact alone would seem to be adequate evidence that no manipulative method is available which will alter the scale sufficiently. In fact, the inventor of such a procedure could retire at once. However, there are a great multiplicity of dodges recommended for changing the scale of the paper from that which the manufacturer made into it. This article will describe some of these dodges and the results obtained. Lest there be any misunderstanding about the conclusions drawn, it should be emphasized that they are drawn on the basis of the experiments to be detailed and do not in any way preclude the possibility of some other set of conditions being more successful. It must be further emphasized that a good quality print

(except for very special subjects) must have a full range of tones from the barest trace of silver deposit to a rich black regardless of whether it is made on a long scale or a short scale paper. (Of course, long and short scale negatives, respectively are necessary to fulfill these conditions.) It is important to remember that this will be considered the definition of a good quality print in the following experiments, because certain procedures seem to change the scale of a paper but do so by leaving out some tone. This apparent change in scale undoubtedly accounts for the wide-spread belief that exposure scale can be altered by manipulation. In the discussion an "apparent change of scale" will mean a change of scale with a loss of one or more tones, which is not a true alteration of exposure scale.

Let us consider the steps in the making of a print and the possible factors which may be varied (about threefold) to alter the scale of the chosen paper.

TABLE I

Basic Factors	Variables
A. Exposure	1. Time
	2. Light Strength
	3. Diffuseness of the Light
B. Fore Treatment	4. Dichromate Bath
C. Developer	5. Carbonate Proportion
	6. Bromide Proportion
	7. Developing Agent used
	8. Dilution or Concentration
D. Development	9. Time
	10. Temperature

This gives us ten variables. If we only use half, double and the normal of these ten variables, the total number of combinations is 3^{10} or 59,049, a staggering number of experiments almost impossible to complete. When this number is multiplied by the number of brands and grades of both contact and projection paper, the number of experiments necessary to completely settle the problem is overwhelming. It is impossible to draw correct conclusions when two or more variables are changed simultaneously although many amateurs do this. So we will set a few constants and vary only one factor at a time, assuming, except in a few cases where we have evidence to the contrary, that the effect of the various factors is additive. The temperature of the developing bath, was eliminated as a variable by maintaining a temperature of 70° even though some workers recommend a higher temperature. A cold developer works slowly or incompletely and a warm developer increases the tendency to fog.

One seldom sees a report of negative results in scientific journals, on the theory that one being unsuccessful is no proof that another may not be successful. While this is true, there is no apology for the following negative results. The experiments have been so performed that

it is believed that anyone using the same materials and conditions will get the same results. They are detailed to clear up some prevalent misunderstandings and in the hope that anyone who knows any successful way of materially altering the scale of a paper will write and tell us. In all cases the finished prints, identification hidden, have been shown to several impartial critics, and in each case there was perfect agreement as to whether or not a change in scale had been attained.

Experimental

Some preliminary experiments were made using a portrait negative as a basis of comparison but it was obvious from the start that while this method would show a general trend, it might not show small variations and could not give any measure of the extent of variations in scale. Therefore a sensitometric strip or step tablet of known density range was used. This was step tablet No. 188 (prepared and calibrated by Eastman Kodak Co. on order for 10 dollars.) This strip is about ten inches long and an inch and a half wide and has twenty-one steps ranging in density from 0.08 to 3.14. This corresponds to a range in opacity (i.e. exposure time factor) from 1.2 to 1380. Each step increases in opacity by the square root of two, or in density by 0.15, therefore every second step amounts to a two fold exposure. Eastman Kodak Co. will prepare, calibrate and mount between glass a similar sensitometric strip or step tablet for 15 dollars. And a similar uncalibrated tablet, sufficiently accurate for most work, (if the difference in density between one step and the next is 0.15, the error may be as much as ± 0.03) is available at \$2.50. At least two other commercially available step tablets have been advertised in CAMERA CRAFT. Nothing is known or said as to the probable error in the opacities (probably relative opacities) stated on the strips. These strips are less expensive than Eastman Kodak Co.'s and unless one has the patience to make and calibrate his own strip, a great deal may be learned from their use. The Eastman tablet is preferable, however, because it has twice as many steps for the same scale covered and thus doubles the precision of the measurements. The method of preparing and calibrating an effective step tablet, which can be done by anyone willing to use some time and care, will be described later. The use of a step tablet is simple and has been given in CAMERA CRAFT. (see Nov. 1933). However, an example may be given: suppose we make a contact print from the strip and develop it by any chosen method. Now we find no further blackening in the print past an area in the strip which we know transmitted 50% of the light, and the first trace of deposit in the print corresponds to an area in the strip which transmitted 1% of the light. It is obvious that regardless of the actual exposure or light intensity one area (black) has received 50 times the exposure of the light area. The scale of the paper, by this particular manipulation, is 50. If some other manipulation will cause the black to come at 50%, and the light at 2%, the scale has been shortened (increased contrast) to 25. This procedure enables us to detect relatively small differences in contrast, as the final prints may be placed with corresponding areas together and closely compared. Further, it enables us to state *quantitatively*, the

magnitude of the change. While more exact optical methods are known and used in scientific laboratories for making the same measurements, they are complicated and require expensive apparatus. The method used here is more precise than is necessary for printing pictures, i.e. it enables us to draw conclusions closer than we are able to apply in the preparation of a print because only a few grades of paper are available or necessary. One great advantage is that it can and *should* be used by everyone making prints. Photography may be considered a laboratory science and hence any one of the following experiments can be performed with a corresponding increase in ones understanding of the processes involved.

Developers

It is customary to present the data first and the conclusions follow. However it makes more interesting reading to state and discuss the conclusions first, then if you are convinced you may skip the data. It can be dogmatically stated that every method of development, or composition of developer so far tested has changed the scale considerably less than one grade of paper. In fact, contrary to the widespread belief, a change in scale due to manipulation of the developer is rare and small, essentially insignificant. It is true that a cold or dilute developer or one containing great excess of bromide (4-8 times normal) will usually produce under-developed prints which have an "apparent longer scale" (i.e. softer) but the print quality is invariably poor unless the development is sufficiently prolonged to produce complete development, when the original scale of the paper is again attained.

Three papers were chosen for experiment: all of Eastman Kodak Company's manufacture. (Not that they are necessarily superior to other brands but entirely satisfactory results have been obtained with them. Users of other brands must repeat the following experiments to have available similar data). Azo No. 2 E double weight is a typical example of a chloride paper. News Bromide medium of a bromide paper and Opal of a chloro-bromide paper.

Contact prints of the step tablet No. 188 were made, on Azo by the light of a 60 watt light diffused by flashed opal glass, on Opal by light of a 5 watt light diffused by two layers of flashed opal glass and on News Bromide by the light of a yellow 10 watt "safe-light" lamp similarly diffused. Azo prints were developed for 1 minute and projection paper prints 2 minutes, unless otherwise noted. The developing time is slightly increased over that usually recommended in order to be certain of *complete development*, a very important consideration, as has been pointed out before and will be seen from the recorded results. The temperature of all developers used was maintained at 70° F. After a 5-10 second rinse in an acetic acid short stop bath, the prints were fixed in fresh hypo solution 15-20 minutes, washed and dried. In the course of these experiments about 400 prints have been made, some duplicates, some with smaller or larger variations of the factors to be tested. A few typical results have been tabulated in Table II. All of these results and many of those not given have been critically examined by competent but

disinterested observers, the prints being identified entirely by code numbers. In the main the agreement was excellent, the occasional discrepancies being usually changed by a later re-examination of the prints.

Table II is nearly self explanatory. The number of steps counted including the first trace of deposit and the last visible step in the black has been averaged for the various observers and appears in column seven. It is interesting to note that there was practically unanimous agreement as to the step which gave the first trace of deposit in any one case, but the agreement was not so good as to the last visible step in the black. This was later traced to the illumination of the print when examined. One can not see so far down into the shadow end in a poor light. Examiners viewing in the same light showed excellent agreement. The effect

TABLE II

Strip No.	Paper	Exp. Time	Devel. Time	Devel.	Remarks	No. Steps	Exp. Scale
1.	Vit. Opal	15 sec.	2 min.	D52		9	22
2.	"	80 "	2 "	"	Effect of Inc. Exposure	9	22
3.	"	30 "	1 "	"	Watkins factor-mealy print, poor black		longer
4.	"	7½ "	4 "	"	Watkins factor	9	22
5.	"	1 "	2 "	"	Strong light and short Exp.	9	22
6.	"	20 min.	2 "	"	Weak light and long Exp.	9	22
7.	"	10 sec.	2 "	"	Sterry pretreatment in potassium dichromate		no good
8.	"	40 "	3 "	"	Same		reverses
9.	"	10 "	4 "	"	Same—poor blacks	12	64
10.	"	10 "	4 "	"	4 times normal bromide in dev.	9	22
11.	"	20 "	2 "	"	10 times normal bromide in dev.	9	22
12.	"	5 "	2 "	D72	D72 contains 2 times carbonate of D52	8	16
13.	"	5 "	2 "	D73	D73 contains 3 times carbonate of D52	8	16
14.	"	15 "	2 "	D64 soft	Hydroquinone content low	9	22
15.	"	15 "	2 "	D64 hard	Hydroquinone content high	8	16
16.	"	5 "	2 "	Amidol		8	16
17.	"	5 "	4 "	"	Very slight fog	8	16
18.	"	10 "	1 "	"		8	16
19.	Azo. No. 2	20 "	1 "	D52		10	32
20.	"	10 "	2 "	"		10	32
21.	"	40 "	½ "	"	Mealy, uneven tone, poor black		Apparently longer
22.	"	30 sec.	1 "	"	4 times normal bromide	10	32
23.	"	1 min.	1 "	"	10 times normal bromide poor blacks		Apparently longer
24.	"	20 sec.	1 "	D72		10	32
25.	"	20 "	1 "	D73		10	32
26.	"	15 "	1 "	Amidol		10	32
27.	"	30 "	½ "	"		10	32
28.	"	15 "	2 "	"		10	32
29.	News Bromide Medium	15 "	2 "	D52		11	44
30.	"	30 "	2 "	"	4 times bromide content	11	44
31.	"	45 "	2 "	"	10 times bromide content	11	44
32.	"	15 "	2 "	D72	Carbonate content	11	44
33.	"	15 "	2 "	D73	Carbonate content	11	44
34.	"	15 "	2 "	Amidol		11	44
35.	"	30 "	1 "	"	Watkins factor	11	44
36.	"	7½ "	4 "	"	Watkins factor	11	44

of the illumination on the apparent quality of the finished print is not sufficiently appreciated. It also shows the practical uselessness of trying to develop a print to the best quality by inspection in the dark room light. This uselessness is further increased by the wetness of the print and by the unfixed silver salts. Who has not seen a print brighten up when placed in the hypo.

As each two steps represents double exposure, a print with 8 steps is equivalent to $2 \times 2 \times 2 \times 2$ or a scale of 16; 10 steps is twice as much or 32 and 12 steps is again doubled for a scale of 64.

Each step is equal to the square root of two or approximately 1.41. Therefore the odd numbered steps can be converted into terms of scale by multiplying the previous even step scale by 1.41.

A comparison of the compositions as used, of developers D52, D72, and D73 show that they are essentially the same, except that D72 contains twice as much carbonate as D52 and D73 contains three times as much carbonate as D52. It is interesting to compare these developers with D64 in its "soft", "medium" and "hard" modifications. Table III compares these in the metric system as then each quantity is easily related.

TABLE III

	D52	D72	D73	D64S	D64M	D64H	52	72	As Used			
Elon	1.5	3.1	2.8	4.7	2.35	1.6	.75	.8	.73	.64S	.64M	.64H
S. Sulfite	22.5	45.0	40	33.8	33.8	33.8	11.2	11.2	13.3	12.7	12.7	19.0
Hydroquinone	6.3	12.2	10.8	5.2	12.2	16.5	3.45	3.05	3.6	1.95	4.57	9.3
P. Bromide	1.6	1.9	0.8	3.5	3.5	3.5	.8	.5	.27	1.3	1.3	1.9
S. Carbonate	15.0	67.5	75	26.9	26.9	26.9	7.5	16.8	25	10.1	10.1	15.1
Water-liters	1	1	1	1	1	1	1	1	1	1	1	1
Dilution	1:	1:4	1:2	3:5	3:5	9:7						

One of the main differences between D52, D72 and D73 has been mentioned, the other is obviously an inversely proportional bromide content. As we will later see the bromide content controls the tone and not the paper scale, and the carbonate content controls the speed and not the scale (except on Opal papers.) The ability to prepare a solution of D72 quickly from D52 is frequently useful, particularly if one occasionally uses Velox paper which can not be developed in D52 (it contains too little carbonate).

It has been found more convenient to make up D52 stock solution double strength, it then is equivalent to D72 except for less carbonate and more bromide. It should be diluted 1 to 3 instead of 1 to 1. This conserves on storage space for bottles of stock solution. A question to Eastman Kodak Co. brought the answer that there was no objection to the procedure except that at 40° F. some constituents might crystallize out. They might also have added that at about 30° F. the whole solution would crystallize. With the D52 as a base it is most easy to convert to the equivalent of D72 or D73 by adding more carbonate. If the carbonate solution for either D1 or D7 is available, which contains 75 grams sodium carbonate per liter of water (2 and one half oz. per 32 oz. of water), add 100cc. of this solution to each liter of diluted developer (1 oz. per 10 oz. final developer) for D72, and twice this amount for the equivalent of D73. The amidol formula used in the test given in Table II was that given on the bottle of Agfa amidol for paper. Sev-

eral other formulae have been tried with similar results. Hydroquinone is supposed to give contrasty results, and so the hard modification of D64 has about nine times (relative to Elon) as much hydroquinone as the soft modification. This marked increase in hydroquinone, however only decreases the scale by 40%, less than one grade of paper. In fact a developer containing no Elon, such as the following:

(quoted from John Paul Edwards)

Hydroquinone	1½ oz.	10 grams
Sodium Sulphite	1½ ozs.	30 grams
Sodium Carbonate	3 ozs.	60 grams
Potassium Bromide	¼ oz.	5 grams
Water	50 ozs.	1 liter

does not increase the contrast any more than D64 hard. It does however give pleasing warm tones.

A method for increasing the scale of a paper has been proposed by Sterry. After exposing and wetting the print in clear water, it is immersed in a one per cent solution of potassium dichromate for two minutes, it is then washed and developed. The apparent scale is very appreciably softened, but development must be prolonged and good blacks have not been obtained.

An interesting and valuable fact brought out by the experiments is the change of speed of a paper with change in developer. The data is given in Table IV. The development time in each case was two minutes at 70° F. for Opal and News Bromide and one minute for Azo paper. It is immediately obvious that the bromide concentration has a pronounced effect on the paper speed, increase of bromide materially reducing the paper speed. Doubling the carbonate concentration approximately doubles the speed of Opal and Azo papers but seems to have no effect on News Bromide.

TABLE IV

Developer	Opal		Azo		News Bromide	
	A*	B*	A*	B*	A*	B*
D52.....	19	2	12.6	1.5	6.1	1
D72.....	9	1	8.2	1	6.1	1
D73.....	12.5	1.5	8.2	1	9.5	1.5
Amidol.....	9	1	13.3	1.5	6.1	1
D52+4xbromide.....	18	2	26.7	3	19	3
D52+10xbromide.....	25	3	53	6	28	5

* "A" is an exposure value obtained by multiplying the actual exposure time in seconds by the percentage light transmission of the step on the step tablet which produced a slight trace of silver deposit in the print. "B" is a value giving the relative exposure times to produce the first faint silver deposit on the print for the various developers.

The anomalous behavior of D73 (three times carbonate) is difficult to explain. A tendency to fog with this developer has been noticed on projection papers. Amidol developer doubles the speed of Opal paper, but seems to have little effect on the others. Amidol, D72 and D73 produce colder (i.e. blue-black) tones, while increase in bromide yields warmer (i.e. brown-black) tones.

Other tests (not tabulated) have shown that dilution of D52 devel-

oper with 2 or 3 parts water does not change the paper scale but the development time must be materially increased. This explains the recurring statement that a diluted developer will give softer prints. It does so at the expense of underdeveloped prints lacking good black tones. A long exposure scale paper should not lack a full range of tones, and merely to cut down the reflection scale by underdevelopment, may fool the non-critical but this full range of tones is not obtained and a poor quality print will result. Similar dilution tests have been made using amidol in which the amidol varied from about four times to one quarter normal concentration. No alteration in the scale of the final print was observed, and also there was less change in development time. This last effect is due to the fact that in the carbonate containing developers, dilution dilutes the carbonate as well as the developing agent, thereby reducing the developing potential of the solution. Amidol developer contains no carbonate, so its dilution does not alter the developing potential but only the number of prints developable in a given volume of solution. This explains why there are so many "pet" amidol formulae in which the amidol concentration varies surprisingly. The conclusion to be drawn from this work is that they are probably all equally good. A concentrated developer will last longer, will develop more prints before becoming exhausted, but it also has a slight tendency to stain particularly on nearing exhaustion. A dilute developer will not develop enough prints. A happy medium is probably one very like that given on the bottle or in a standard text on Photography.

Time of development:—Because of the well known fact that increasing the time of development of transparencies (films, plates and lantern slides) will increase the transmission scale (increase the contrast) there is almost as wide spread a belief that increasing the time of development of a paper print will decrease its scale (increase the contrast).*

That this is not the case is due largely to the fact that in one case we deal with transparencies and an increase in silver deposition will reduce the percentage of light transmitted. In paper prints, however, when a maximum black is observed by reflected light, a further deposition of silver will not increase the blackness. Thus nothing is gained by increasing the development time except an increase in the apparent speed of the paper, i.e. a shorter exposure is required. Watkins has made this fact the basis of an excellent system of exposure and development in which, within certain limits, the product of exposure time and development time is a constant. If the contrast altered with change of development time, the system would not be successful, nor does Watkins claim for his system that a change of scale is obtained. Test strips have shown conclusively that, within a range where good blacks and whites are obtained, no change in scale results. In Table II, compare strips No. 1, 3, and 4; No. 19, 20 and 21; and No. 34, 35, 36. These test strips are not as convincing to the average person as the test shown in Fig. 1. To make this test a portrait negative was chosen and a series of exposures

*As was explained in the previous issue this misunderstanding is partly due to the use of the term contrast. The parenthetical statements bear this out; an increase of contrast in a transparency increases the transmission scale, but an increase in contrast of a paper print *decreases* the exposure scale.

made, differing by a constant factor ($\sqrt{2}$ or 1.41). The prints were developed for times which varied by the same factor. This test is tedious but very easy to make, and it is one which each reader interested in improving the photographic quality of his prints is most strongly urged to make, because it yields so much information. (Note. The times of development should be adhered to if enlarging paper is used for the test, for contact paper they should be halved). The printing time will vary with the light source used but in this case the light source should be varied to meet the times given, as a shorter exposure can not be accurately measured and a longer one is too tedious. The time is calculated so that a good quality print on normal development is near the middle of the chart. A 10 watt, clear yellow (so called safe light) bulb diffused by flashed opal glass was used in making the tests. The fact may not be apparent in the reproduction but the first thing this test shows is that there is no change of scale with change of development time, provided the range of tones is complete. But it also gives a great deal more information. It confirms the Watkins factor principle, but more importantly shows its limits. For instance, up to three times normal exposure, will not give a good print with either $\frac{3}{4}$ or one minutes development time (Opal paper in D64B) and three times normal development will not give a good print with five or seven seconds exposure. It establishes the not sufficiently appreciated fact that an over exposed print is not saved by jerking it from the developer, and that a badly under-exposed print is hopeless. Also that every exposure time within the proper limits has an optimum development time. This is shown by choosing the print you believe is best in quality, it will be found that each print (within the above limits) which lies on a diagonal is identical. So for identical prints, the product of the exposure time and development time is a constant. In this test the product is forty. One is well repaid for the time used in making this test and in studying the results carefully. (It is understood that all the prints in this test are made with a constant light source and with the developer temperature constant).

Conclusions

The findings can be summarized in the following statements:

1. Dilution of the developer (D52), with an equal volume of water has no effect on the paper scale, provided development time is slightly increased (about 25-50%). Normal development yields prints of "apparent longer scale".
2. Dilution of the developer with three parts of water has no effect on paper scale, but development time must be increased fourfold.
3. Addition of potassium bromide to the developer up to a concentration where development is noticeably inhibited does not alter the paper scale if the exposure time is increased. Which is another way of saying that the main effect of excess bromide in a developer is to decrease the working speed of a paper. E. G. $\frac{3}{4}x$ normal bromide halves paper speed. $14x$ normal bromide quarters paper speed but gives poor quality brownish and slightly mottled prints. The tone of the print be-



Fig. 1. Contact prints on Opal paper developed in D-52.

All prints in the same vertical column received the same exposure time. All prints in the same horizontal row received the same development time. The exposure times in seconds reading from left to right are as follows: 5, 7, 10, 14, 20, 28, and 40 seconds. Development times in minutes reading from the top downward are as follows: 0.75, 1.0, 1.4, 2.0, 2.8, 4.0 minutes.

comes slightly warmer by increasing the bromide content. A normally exposed print developed in a developer containing excess bromide may have an "apparent longer scale" at the expense of the black tones.

4. Prolonged development in D52 or Amidol up to 4 minutes, does not alter the paper scale (a proportionately reduced exposure time is necessary as the longer development increases the apparent speed of the paper. A slight but noticeable fog is produced by a four minute development.)

5. A shortened development (1 min. for projection, and a half minute for contact papers) lengthens the apparent scale of the paper, but does so by producing, mealy, uneven tones and poor blacks.

6. The effective speed of the papers tested varies considerably with the developer used. See Table III.

7. In the "hard" and "soft" solutions of D64 there is a variation of scale of about 40% for Opal paper.

8. Amidol developer produces the same scale on Azo and News Bromide papers as D52, but decreases the scale of Opal paper about 40%.

9. Increasing the amount of carbonate, does not alter the scale of Azo or News Bromide but does materially increase the apparent speed of the paper and changes the tone of the final print. Increased carbonate decreases the scale of Opal paper about 40%.

10. Use of dichromate as a fore bath, materially increases the apparent paper scale (i.e. decreases contrast). A longer development will bring back almost the original contrast but a good black is practically impossible to obtain.

11. The Watkins factor principle is found to hold i.e. within reasonable limits the product of the exposure time and development time is a constant, without altering the scale of the final print.

12. The light intensity factor does not produce a change of scale on Opal paper.

In concluding this part the writer wishes to make an acknowledgment which was inadvertently omitted from the first article. A number of the experiments described in these articles were suggested and encouraged by the emphasis placed on the concept of scale, in the photographic classes of the University of California Extension Division, conducted by P. Douglas Anderson, A.R.P.S.

This paper has necessarily been concerned primarily with reporting negative results—things which don't work. In Part III of this series, which will appear in our June issue, Mr. Benedict describes an effective method for varying the exposure scale of any printing paper (i.e. varying the contrast of the paper) within wide limits. This is a very important and helpful article. Don't miss it!—ED.

Cinema Section

Edited by

William A. Palmer

Cine Lessons From Charlie

THE new Chaplin picture "Modern Times" is one that every amateur movie maker should see, for it is the only picture using silent film technique to come from Hollywood for about eight years. Moreover it gives a chance to make a comparison between the acting of the silent films of ten years ago (acting of the supporting players not Chaplin's) and the present talkie methods and to apply the lesson thus gained to our own filming problems. The acting of Charlie Chaplin one should not analyze nor compare with any other, for it is absolutely unique, but there is plenty of action in the minor roles which is done in the same manner as the old silents, showing a striking difference from the dialogue films.

There is a great deal to study in this film and we suggest that you plan to attend a showing first as a regular theater goer and enjoy the film without thinking about how it gets that way, then go once again or several times more in order study it. Chaplin has used the technique in photography, lighting, and continuity that he has always used. The sound that accompanies the picture consists of a musical score, specially written by Chaplin himself, and certain sound effects such as machinery running, radios playing, etc., but these are used sparingly. The important point is that in the major part Chaplin has made the picture with no more elaborate tools than those found in any amateur's cine closet. Nowhere is the lighting and photography more complicated than that done by the careful amateur and the musical score could have been supplied by standard phonograph records carefully chosen and synchronized in the manner that many amateurs use. The Chaplin score, of course, could not be approximated but it is not essential; the picture would still make its mark if run with the sound apparatus turned off. Thus it lives up to one of the most important yardsticks for judging the worth of a picture. With the Chaplin score the picture is set off to wonderful advantage, for the music is very suitable to the action and moods of the picture.

Strange as it may seem, the lack of dialogue in this film, when we have become so used to it in the regular Hollywood product, is not at all disturbing. Because the story is almost entirely true movie material (i.e. action), dialogue does not seem necessary in a good part of the sequences, the mean-

ing being conveyed perfectly by pantomime alone. In other sequences when dialogue by sub-title is used it seems natural enough. Thus the first lesson that the picture can teach to the amateur filmer who must work with silent movies is: As long as story material is used in which dialogue is a minor part and *action* is the keynote, sound recording becomes only a superior substitute for the sub-title. Those amateurs who feel that, because they can't afford sound recording apparatus, their cine product must be old fashioned, should feel encouraged. Sound recording equipment can certainly broaden the movie's ability to portray different types of stories but it is no more than a slight aid to action material. Motion Pictures' appeal is still ninety percent visual.

The second lesson that we can take from this film is in slapstick comedy, that special brand which the movies made famous in two reel doses and which Chaplin immortalized. Slapstick comedy can be far more effective in the movies than on the stage because of the seemingly impossible tricks that the camera can play, speeding up the action, causing a person to go through the most perilous accidents without harm. Chaplin uses camera tricks to a certain extent, particularly speeding up the action by operating the camera under normal speed. For the most part, however, his acrobatics such as his famous skid-around-the-corner and his skating act are his own skill unaided by a deceitful camera. Completely unnatural, ridiculous slapstick comedy is a very excellent movie form for an amateur to use, especially when one wants to spend an evening of recreational filming when friends drop in. At such times serious filming is apt to be more of a bore than a recreation to those who are not particularly interested in cine mechanics. But slapstick comedy—a good rip-roaring yarn, filmed when everyone feels silly is a perfect evenings entertainment. Sometime, try a cine party at which you and your friends make a wild slapstick version of a well known fairy tale. You, the producer, should plan ahead a brief outline of the continuity to serve as a starter and provide a few properties and costume materials such as false mustaches, queer hats, etc. Curtains, bed sheets, and lamp shades should be used to augment the costume facilities. Once the party gets under way, there will be many impromptu additions and suggestions to the original plan and these should be followed, for they will give greater spontaneousness to the show.

But to get back to "Modern Times". Here the comedy rests largely with the pantomime of Charlie, his manner of walking, and the situations that come up in which he is unable to hold his own. To our mind, though, the funniest acting in the whole picture is done not by an actor but by a machine. It is the automatic feeding machine which is demonstrated to the factory head with Charlie as the unfortunate victim. The performance of this machine cannot be described so as to give any idea of the guffaws it produces. It suffices to say that this little sequence in which the machine goes haywire and does things to poor Charlie has all the ingredients of true action comedy. Particularly choice is the repeated correct operation of the mouth wiper after everything else on the machine has mis-fired.

So far we have mentioned characteristics of the picture which show that the present talkies have not given a great deal to motion picture portrayal of action stories. However, when it comes to the acting of the supporting

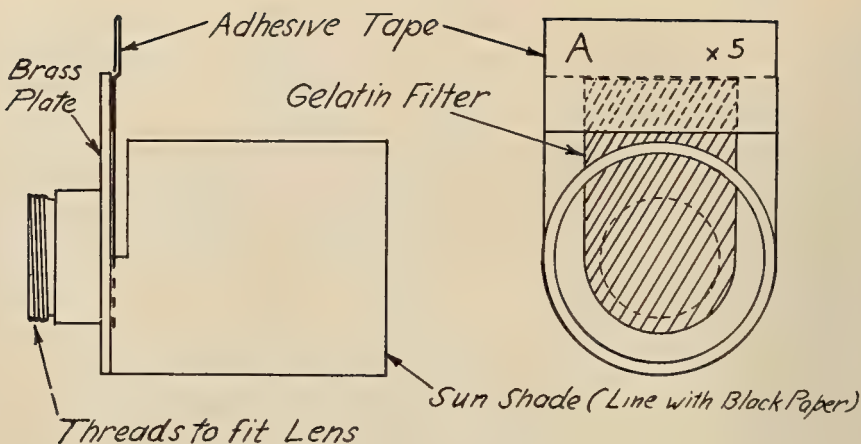
players, we believe Chaplin is a bit behind times. He has directed his players to act with quick exaggerated motions so that there is no doubt as to the meaning of the story. We believe that the more restrained natural action of the best talkies is far better. We are here referring to the "straight" parts in the picture, not those, like the man who orders a duck in the cafe, whose exaggerated action is done for comedy effect. The acting of the warden of the prison, the probation officers, and particularly Paulette Godard in those pathetic scenes where she finds her father dead, is much too unrestrained. Thus another lesson from Charlie: serious motion picture acting should be sincere, restrained, and natural.

Finally one scene should be pointed out as an exceptionally valuable lesson to the amateur movie maker—the final scene in which the little tramp and the gamin go off down the long road. Here is a scene of breath-taking beauty but nevertheless a scene that was extremely simple to make. It is taken on a highway looking toward some foothills. The camera is pointed almost into the sun which is very low and there is enough haze in the hills so that no detail save the outlines of the various hill crests can be seen. The scene is quite dark and the elongated shadows of the two reach out toward the camera. It is taken under conditions that are often present at the close of day when most amateur filmers put their cameras away, saying the sun is too weak and there is too much haze to get a good distance shot. The lesson here is that more often than not, atmospheric haze is very valuable to a scene, particularly one made on color film, and that lighting when the sun is near the horizon, just after sun-rise and just before sun-set, is most interesting.

Use Of Gelatin Filters

THOSE who are not thoroughly familiar with the function of the various special filters for monochrome photography seldom wish to make the rather substantial investment in a complete set of glass filters. For experimental purposes and for occasional use, the filters may be purchased in gelatin for a very small sum, a complete set costing less than one glass filter. The gelatin filters are every bit as good if not better than the thicker glass variety but their use always brings up the problem of how to handle them without damage. The gelatin surface is very soft and subject to scratches. Even touching the surface with a finger will make a bad mark. It is necessary to devise some method of storing and handling the pieces of gelatin so that they will remain clear and unmarked.

Illustrated here is one suggestion for using gelatin filters. This consists of a combined filter holder and sun shade which can be made by anyone with



GELATIN FILTER HOLDER

little trouble. The unit has a little collar, threaded to fit the lens mount of the camera, to which is soldered a brass plate with a hole drilled in it large enough to allow the lens an unobstructed view. The collar is merely the mount of a regular filter with the glass removed. Unto the brass plate, which is rectangular with a rounded end (see drawing) is soldered a short piece of brass tubing to serve as a sun shade. The tubing is cut away where it joins the plate for one half of its diameter, forming a slot in which the gelatin filter can be slipped. The pieces of gelatin are cut out in a rectangular form with rounded ends and attached to small pieces of adhesive tape, the end of the tape being folded over to serve as a handle. The tape and gelatin then form a little tab which may be handled without damaging the gelatin, easily slipped into the slot of the filter holder and held there by sticking the adhesive tape to the plate. A study of the drawing will show how this works. When the filter is not in use, it is removed from the holder and put between the pages of the stamp book.

In cutting the gelatin and affixing it to the adhesive tape, it should be handled between the sheets of tissue paper in which it is wrapped when purchased. The filter and the tissue paper can be cut together and the latter discarded after the gelatin is attached to the adhesive tape. On the adhesive tape handle should be marked the type of filter and the factor for the type of film most used. In the drawing the filter is a red "A" with a factor of x5, meaning "times five". With repeated use the filter is bound to become somewhat obscured and when this happens it should be discarded and replaced with a new piece. Since the gelatin is so cheap, it can be replaced many times before even approaching the cost of a glass one.

New Kodachrome Type A Film

ANOTHER decided step in the Kodachrome color process comes with the announcement of a new emulsion, called type "A", for use with artificial photoflood illumination. This film increases the flexibility of indoor color filming so that the amount of light needed is about the same as for monochrome work with regular panchromatic film. The new Kodachrome film is corrected for the color of photoflood lamps and is therefore used without any compensating filter. As a result the film becomes four times as fast as the regular Kodachrome with the filter for photoflood.

It should be noted that the new Kodachrome "A" film does not take the place of the regular Kodachrome and should not be used on exteriors at the present time. We are informed, however, that a filter will be supplied at a later date so that the "A" film can be used for exteriors.

Now it is possible to make surgical color pictures with the ordinary operating room lights and an f 1.9 lens, to make home family records with only two or three lamps instead of a studio battery, to use colored lighting as the stage does, and to do many of the industrial and scientific filming jobs which have been impossible because one could not get sufficient light on the subject.

For those who use a photoelectric exposure meter the film has the following sensitivity according to the best information we have at the present time:

Weston 6
Scheiner 17
H&D 308

For those who do not use a meter, the following table is helpful:

EXPOSURE FOR KODACHROME TYPE A FILM

16 PICTURES PER SECOND

NO FILTER USED

	f 1.9	f 2.7	f 3.5	f 4.5
Number of	2 at 7½ ft.	2 at 5 ft.	2 at 3½ ft.	2 at 2¼ ft.
Photoflood	3 at 9½ ft.	3 at 6 ft.	3 at 4¼ ft.	3 at 3 ft.
Lamps and	4 at 11 ft.	4 at 7½ ft.	4 at 5 ft.	4 at 3½ ft.
Distance of lamps from.....	6 at 13 ft.	6 at 9½ ft.	6 at 6 ft.	6 at 4½ ft.
Subject	8 at 15 ft.	8 at 11 ft.	8 at 7 ft.	8 at 5 ft.

Important: The exposures above are for photoflood lamps in reflectors, all superimposed on the same area, and operated at 120 Volts. Low voltage or poor reflectors will necessitate an increase in exposure.



"Curves"

John Muller

Advanced Medal Print

■ With this picture Mr. Muller once again displays his fine talent for finding pictorial material. It is our impression that photographers in general do not give sufficient attention to the problem of developing their ability to "see" pictures in the welter of material which confronts them. Such a condition is the logical result of the fact that it is virtually impossible to give any practical suggestions as to how that sense may be cultivated. It is in this aspect of picture making that what is vaguely called talent is most in evidence. Nevertheless proof of the possibility of cultivating such talent is to be found every day in the progress made by those photographers who are truly "going ahead" in their work. This may appear to be a rather paradoxical position; certainly it is vague enough to be irritating. We are merely trying to point out the importance of keeping this problem in mind. Its solution must derive from prolonged and well-directed practice. Do not study pictures solely for their composition. Ask yourself if you would have been likely to "see" a picture in such subject matter. Such self-interrogation is likely to reveal blind spots which practice and study will eliminate. The one weakness of this picture lies in the complication of material surrounding the figure and the light patch at the top of the print. These combine to subdue the strength of the figure and work against the fine simplicity found in the

(Continued on Page 249)

**Second Award
Advanced Class**

■ Mr. Gould offers a print of great technical beauty that is especially effective in its fine rendering of textures. The low position of figures and anchor serves to emphasize the fact that these are suspended from above, while the space above the principle objects is necessary to carry out the suggestion of great size in the hull.

It is true we believe that critics and artists in other mediums are becoming more and more interested in photography as an art form. Until one realizes the logical basis of their attitude he will be surprised at the unanimity of approach to photography evidenced in those whose main experience has been with other mediums. They all look for a superlative rendering of fine gradations. This means that objects must appear to have definite solidity with space **behind** and that each object must take its proper place in the receding planes of the picture. Photographers are too willing to assume that the camera takes care of these matters automatically and consequently neglect to look at their work critically from this point of view.

Mr. Gould appears to be well aware of the requirements mentioned above. Observe that you can really **see** space between the figures and the hull and the anchor and the hull.

Data: 4x5" Graflex; 8½" Bausch & Lomb Tessar; 1/95th sec., at F:8, at 9:30 A. M.



"Wear and Tear"

Fletcher O. Gould



"Hunger"

Don Wallace

the other features of these competitions. The writer, personally, would place this picture first because the marvelously caught expression gives it a meaning and vitality that is not to be found in any other picture in the group. Observe also how perfectly the action contributes to the idea of the picture. The mouth tasting the rail of the crib is in itself eloquent of the desire for food, while the hands suggesting an effort to climb, further enhance the theme.

Data: Studio Camera; Vitax lens; 1/25th sec., at F:3.8 by artificial light; panchromatic film; bromide print.

**Third Award
Advanced Class**

■ We are often tempted to point to our readers that too much importance should not be placed on the arrangement of these pictures in one, two, three, four, five, order. It is a very difficult matter to establish such a relation between five pictures of radically different spirit and treatment. It should be obvious to all that different juries would seldom arrive at an identical arrangement of the prints. The system is maintained not to establish the relative merits of the pictures shown but because it is necessary to the functioning of

**Fourth Award
Advanced Class**



"Zero Weather"

Gustav Anderson

■ Mr. Anderson has been quite successful in conveying the mood of a gloomy, chilly winters day and the subject matter is interestingly seen. From the standpoint of composition we feel that the large mass of dark foliage in the upper left rather over-balances the rest of the picture. To our eye the picture is more effective if we trim in from the left until the first two trees are eliminated, remove a similar amount from the top, and about half as much from the right. We cannot see that such a trimming sacrifices anything of importance, and it does seem to bring about a better balance between the various parts of the picture. The touching in of highlights in the foreground and the emphasizing of the brilliance of the icicles is a good idea but the hand work is too much in evidence.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Linhoff; 6" Tessar; $1/5$ th sec. at F:16, on Agfa Plenachrome in D-76, with K-2 filter; E.K. Opal G in D-72, blue toned. 11×14 " prints on 15×20 " mounts, may be obtained at the price of \$7.00 upon application to **Camera Craft**. No exchanges.

**Fifth Award
Advanced Class**

■ We sternly remind ourselves that **Camera Craft** is a photographic, not a political magazine and thus spare the reader the political comments that a picture such as this calls to mind. We are rather puzzled though, that more amateur photographers have not turned to this field for their material. It seems to us that it should be an especially interesting and satisfying one for those photographers who are also interested in politics and economics. Dorothea Lange, Walker Evans, and Ben Shahn have done some very interesting work of this nature, but the number of amateur photographers who have attempted such subjects is unbelievably small. It would be a mistake, we think, to attempt this sort of work unless one is in sympathy with radical movements; if you are, here is an almost virgin field awaiting your camera. In the present print the composition seems somewhat attenuated with two of the three points of interest at the extreme edges of the print. A shifting of the camera to the right would bring the points of interest together. Whether this would improve the picture or not would depend upon the possibility of finding a position that could still make effective use of the leading lines.



"Driftwood"

Gunnar H. Kampe

is unbelievably small. It would be a mistake, we think, to attempt this sort of work unless one is in sympathy with radical movements; if you are, here is an almost virgin field awaiting your camera. In the present print the composition seems somewhat attenuated with two of the three points of interest at the extreme edges of the print. A shifting of the camera to the right would bring the points of interest together. Whether this would improve the picture or not would depend upon the possibility of finding a position that could still make effective use of the leading lines.

Data: $1\frac{3}{4} \times 2\frac{1}{4}$ " Zeiss Super Ikomat; Zeiss Tessar F:3.5; $1/50$ th sec. at F:11 on S.S. Pan., in D-76, bright sunlight; with X-1 filter; E.K. Opal C in D-52. 11×14 " prints on 16×20 " mounts may be obtained at the price of \$6.00 on application to **Camera Craft**.



Edwin Weizenhoffer

Amateur Medal Print

■ Mr. Weizenhoffer's picture speaks of the hushed lifelessness which winter casts over the farmyard. There is a great deal of material in this picture, and if it had not been so well managed there might well have been the suggestion of too much. We can see a picture of the "pattern" type in the wheels and shadows of the old cart, and another with just the distant houses trimmed away. None of these are as satisfactory as the present print however.

The use of a smaller aperture would have given an improved rendering of texture in the foreground where definition falls off rather noticeably.

Data: 9x12 cm. Zeiss Maximar; 13.5 cm. Zeiss lens; 1/50th sec. at F:12, on S.S. Pan. in D-76 with light yellow filter; print on Agfa Brovira Velvet in D-72. 11x14" prints on 16x20" mounts may be obtained at the price of \$3.00 on application to Camera Craft. No exchanges.

Second Award
Amateur Class



"Harbor Repose"

Frank Navara

■ This picture is remarkable for the fine rendering of ice texture combined with interesting subject matter. The one difficulty concerns the figure. As shown the figure appears too large in relation to the rest of the picture, due partly to its actual size and partly to its strong contrast with its surroundings. For that reason it would have been better to have the figure adopt a pose that would reduce its size (a sitting pose might do if the model could be persuaded to permit such a thing under the circumstances). The position of the right leg seems rather unfortunate in that it tends to set up the suggestion of a movement to the right that is just strong enough to be slightly disturbing. With the figure properly subdued this would be an excellent thing.

Data: Leica F; 50 mm. Elmar F:3.5; 1/60th sec. at F:6.3 on E.K. Panatomic in P-Diamine; 10 A.M. with K-1 filter; Agfa Brovira Royal S in D-72.

Third Award
Amateur Class

■ Mr. Dunlop's picture has a pleasing feeling of the outdoors about it and his combination of dune and figure is very well conceived. We feel however that the high key technique which he has adopted is not particularly in keeping with his subject matter. This is an outdoor subject in strong sunlight showing a fine upstanding, vigorous figure, and consequently the tonal range should likewise be strong and coupled with good textural rendition of the sand. Aside from this matter of treatment we feel that Mr. Dunlop has made the most of his opportunities, but ideally we can visualize a more telling picture with similar material. The figure is so large and dominating in this picture that the sweeping lines of the dune are definitely secondary. If the dune were much larger than it actually is and a similar viewpoint could be achieved at a greater distance we would then have a picture with the same lines and composition but with the figure about one half or one third its present size in relation to the dune. It seems to us that such a relationship would be more harmonious as a composition and definitely more effective as a picture.

Data: 3½x4¼" Graflex Series D; 16.5 cm. Zeiss Tessar; 1/10 sec. at F:16 with K-2 filter, Sunlight at 8 A. M. in January; Portrait Pan. in D-76; Defender Velour Black I in D-64; projection control. 11x14" prints on 14x18" mounts may be obtained at the price of \$6.00 upon application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.



"Morning"

Van F. Dunlop

Fourth Award
Amateur Class

■ By the clever device of plucking away half the flower Mr. Brubaker has established a most interesting subject for his camera and has placed it most satisfactorily in the picture space. Considering the limitations of his equipment it appears that Mr. Brubaker has done all that could fairly be expected of him but it is always entertaining to speculate as to what might be done. If we had a wide-angle lens and large negative we could postulate an interesting photographic problem. With such equipment we should be able to obtain complete depth of focus and a large enough image on the negative so that sharp definition could be maintained throughout the finished print. The problem then would be to photograph so perfectly that the blossoms behind the stem would maintain their position in the proper plane and not appear to come forward to the same plane as the nearer blossoms. Not so easy to achieve as it may seem. In the present print the distant planes are established primarily by differential focussing. Whether a completely sharp print would be a better picture is a question, we are discussing the matter primarily as a technical exercise.

Data: 4x5" Century View; Kodak Anastigmat F:7.7; 30 secs. at F:32 on S.S. Portrait film in D-72; E.K. Opal T in D-72; by 60 watt frosted lamp in reflector. 8x10" prints on 14x18" mounts may be obtained at the price of \$4.00 on application to **Camera Craft**. Prints will be exchanged with other prize winners in these competitions only.



"Dandelion" L. H. Brubaker



"In the Cave" G. T. Yang

Data: Leica; 5 cm. Summar; 1/20 sec. at F:2 by late afternoon sunlight; Agfa Finopan in Agfa 14; Gevaluxe in D-64. Not for sale. Prints will be exchanged with other prize winners in these competitions only.

Fifth Award
Amateur Class

■ There is a peculiarly intriguing quality in the action of these two figures that is difficult to put into words. Perhaps that is because the nature of the action is not entirely clear. The splash of sunlight does much to add interest to the picture, but the line which runs up from one of the figure's head is to be regretted. From the standpoint of composition there is too much space at the right so we can trim away at least a fifth of the total width of the print without loss to the picture.

Monthly Competitions

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: Gunnar H. Kampe and Don Wallace, for the Fort Dearborn Camera Club; Fletcher O. Gould, for the Pack Rats; John Muller, for the Pictorial Photographers of America.

The following won points for their clubs in the Amateur Class: Frank Navara and Edwin Weizenhoffer, for the Pictorial Photographers of America; Van F. Dunlop, for the Riverside Camera Club; and Lester H. Brubaker for the San Jose Camera Club.

The following prize winners have no club affiliations: Gustav Anderson and G. T. Yang.

Contributing Clubs

Aluminum Camera Club (New Kensington, Pa.)	Nashville Camera Club (Tenn.)
Appleton Camera Club (Wis.)	Omaha Camera Club (Nebr.)
Buffalo Amateur Camera Club	Orange Co. Camera Club (Huntington Beach, Calif.)
Calgary "Y" Camera Club (Canada)	The Pack Rats (Pasadena, Calif.)
California Camera Club (San Francisco)	Photographic Society of San Francisco
Camera Club of Richmond (Va.)	Pictorial Photographers of America
Concord Camera Club (N. H.)	Pictorial Photographers of Victoria (Canada)
East Bay Camera Club (Oakland, Calif.)	Redlands Photo Pictorialists (Calif.)
Erie Camera Club (Pa.)	Riverside Camera Club (Calif.)
Fort Dearborn Camera Club	San Jose Camera Club (Calif.)
Golden Gate Miniature Camera Club (San Francisco)	Taft Camera Club (Calif.)
Long Beach Camera Club (Calif.)	Washington Pictorialists (D. C.)
Miniature Camera Club of Oakland (Calif.)	

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club.....	18
Pictorial Photographers of America.....	9
Photographic Society of San Francisco.....	5
Montreal Camera Club.....	2

Large Clubs Amateur Class

Golden Gate Miniature Camera Club....	15
Pictorial Photographers of America.....	9
California Camera Club.....	4
Camera Club of Ottawa.....	3
Miniature Camera Club of Oakland.....	1

Small Clubs Advanced Class

The Pack Rats.....	16
Whittier Camera Club.....	3
Washington Pictorialists.....	2
East Bay Camera Club.....	1

Small Clubs Amateur Class

Riverside Camera Club.....	7
Omaha Camera Club.....	4
Washington Pictorialists.....	4
Camera Club of Long Beach.....	3
Calgary "Y" Camera Club.....	2
San Jose Camera Club.....	2

SUMMARY OF COMPETITION RULES

1. Open to all, amateur or professional, club member or non-club member.
2. Closing date 4th of each month.
3. Place technical data, club membership if any, selling price, and whether or not you wish to exchange on back of print.
4. No entry fees or blanks required.
5. Stamps must be enclosed for return of prints.
6. Full explanation will be sent free on request or may be seen on Page 46 of Jan. 1936 issue.

(Continued from Page 242)

rest of the picture. If the light patch could have been filled in by the girder running in from the left, and the several dark lines just to the right of the figure eliminated, the resulting simplification would greatly improve the picture. It is evident that Mr. Muller appreciated these difficulties and that he could not correct the situation of the figure by shifting camera position without doing violence to the principal lines of his composition.

Data: 4x5" Graflex; Zeiss Tessar F:4.5; 1/10 sec. at F:22, on Defender X.F. Pan., in D-61 A, by hazy sunlight; Defender Velour Black J in D-72. 11x14" prints on 14x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

About Sky Filters

A number of questions have come in concerning Mr. Hedger's remarks about sky filters in the April issue. Mr. Hedger stated that sky filters have no selective effect between sky and foreground and their action was thus imaginary. Mr. Hedger's comments would be strictly true if the sky filter were placed at the optical center of the lens. When the filter is used directly in front of the lens his statements are substantially true, but no statement regarding the effect of a sky filter is complete except in relation to the distance of the filter from the lens and the lens aperture used.

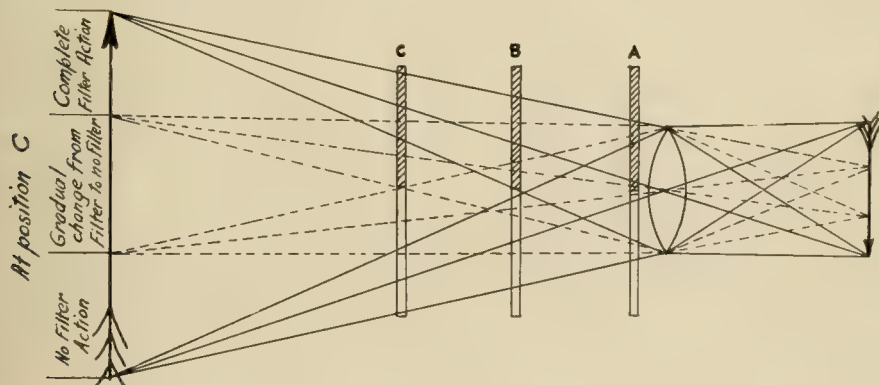
The selective effect of a sky filter depends upon two factors:

1. The aperture of the lens.
2. The distance of the filter from the optical center of the lens.

In practice the sky filter is almost always placed in front of the lens, usually

between $\frac{1}{8}$ to $\frac{1}{4}$ inch from the front surface of the lens. In this position the sky filtering is not noticeable when a large aperture is used although theoretically there is a slight differentiation between the filtering at the top and the bottom of the picture. However, when the lens is stopped down to f 11 and smaller, which is the usual case when photographing a landscape, there is some difference between the filtering action of the sky and the foreground. It should be noted that the filtering action is not separated as one would suppose by examining the filter which is half yellow, half clear, but is gradual. It is the maximum at the top of the scene and grading to little filter action at the bottom. All parts of the negative receive some filtering.

If it is desired that the filter action be confined to the sky with a definite cut-off at the horizon, it is necessary that the



sky filter be placed at a little distance from the lens, preferably three or four inches distant. In such a position the filter must be large enough so that the edges of the filter do not cut into the field. Here again, though, the size of the lens aperture will control the sharpness of the cut-off.

The diagram, reproduced here, shows the effect of a sky filter with a full aperture lens. When in position A, immediately in front of the lens, there is practically no difference in the filtering effect between top and bottom of the image. However, in position B a point at the very top of the scene receives complete filtering and a point at the extreme bottom receives none. Other points receive

gradual changing degrees of filtering between the two extremes. In position C the regions of complete filtering and non-filtering extend in quite a bit from the extremes as indicated in the illustration. With the filter in this last position, stopping the lens down will decrease the region of "gradual change from filter to no filter" until it becomes almost a line.

Thus it is obvious that, properly used the sky filter can be a useful accessory that is capable of many different effects depending upon its placement and the aperture with which it is used. Unfortunately it is usually used in contact with the lens mount where its selective effect is almost negligible as Mr. Hedger has pointed out.

William A. Palmer.

Club Notes

Forthcoming Exhibitions

Fifteenth All American Salon. Sponsored by the Los Angeles Camera Club. Address Edna R. Bennett, Secretary, Los Angeles Camera Club, 2504 West Seventh St., Los Angeles, Calif. Closing date May 15, 1936. Entry fee \$1.00. June 1 to 30, 1936.

The Marshall Field & Company Third Annual Photographic Competition and Salon. Address Marshall Field & Company, State, Washington, Randolph & Wabash, Chicago, Illinois. Closing date May 22, 1936.

The Anthracite Photographic Salon. Under the auspices of the Scranton Camera Club. Address, E. W. Taylor, Director, Scranton Camera Club, Everhart Museum, Scranton, Pa. Closing date May 25, 1936. Entry fee \$1.00, limit 4 prints. June 6 to 21, 1936.

Seventh Chicago International Salon of Photography. Address Alex J. Krupy, Chairman, Salon Committee, Chicago Camera Club, 137 N. Wabash Avenue, Chicago, Illinois. Closing date June 15, 1936. Entry fee \$1.00 for 4 prints, July 23 to October 4, 1936.

Paris XXXI International Salon of Pictorial Photography. Under the auspices of the Societe Francaise de Photographie. Address, Societe Francaise de Photographie, M. E. Cousin, 51, rue de Clichy, Paris, France. Closing date June 30, 1936. Entry fee 25 francs. Limit 4 prints. October 3 to 18, 1936.

First International Photographic Salon in Karlsbad. Address Mr. Hugo Heyer, Schulgasse 26, Karlsbad, Czechoslovakia. Closing date June 18, 1936. Entry fee Kc 30. Limit 6 prints. July 18 to August 9, 1936.

Third Annual Photographic Exhibition of the Yonkers Camera Club. Address John Learie, Exhibit Committee, 67 Linden Street, Yonkers, New York. Closing date July 3, 1936. Entry fee \$.50. Limit 4 prints, mounted on 16x20" stock. Westchester County residents are invited to exhibit. July 12 to July 26, 1936.

California Camera Club

At the annual meeting of the California Camera Club, Inc., San Francisco, held April 14, the following were elected to office:

James H. Winters, President

Hurley Y. Heath, Vice-President and Treasurer

Edna Breslawsky, Secretary

Arnold Anderson, Hector J. Martin and Meyer Levy, Directors.

The new board has made plans to remodel and refinish the Exhibition room and Studio. Also, to add equipment to the dark-rooms and complete a "model" miniature room.

At the May 12 business meeting a Chromatone demonstration will be given by Mr. J. C. Radabaugh, Defender Photo Supply Company representative and Mr. Nay Healy of the T. H. Wilton Company.

Of particular interest is the School of Photography to be given each Thursday evening, 7:30 P.M. at the Club-rooms, commencing on April 23. This course, in practical photography, will be conducted by Mr. Richard H. Mercer, a club member. The lessons will be thoroughly practical, to include both an outline of methods and materials and actual demonstrations of processes with explanations and suggestions.

The fee to non-members will be \$5.00 for the course. This amount can be applied towards cost of membership in the Club.

The Camera Club

Its Organization and Management

The Photographic Society of America has just issued a new and completely revised edition of this booklet with the above title. This gives many very helpful suggestions to those who are organizing a camera club or to those who want advice as to how to carry on club activities. Available from B. H. Chatto, Sec., 1300 Milton Ave., Pittsburgh, Pa., price \$.25.

Pack Rats Traveling Salon

The Pack Rats each year offer one of the finest Traveling Exhibitions that are

to be had. The pictures are all of the desert country of the southwest and are beautifully seen and printed. Organizations who wish to receive this show should write promptly to J. W. Shigley, Sec., 44 Terrace Drive, Pasadena, Calif. You will be glad you asked for it.

Hartford County Camera Club

The annual meeting of the Hartford County Camera Club, Incorporated was held on April 9th. Following an annual custom, this meeting took the form of a dinner and entertainment. Usual stage lights in the dining hall of the Hotel Bond were replaced with photoflood bulbs and member-representatives of the local light company staged extra lighting so that even the slower lenses were enabled to record the various acts.

Officers elected to serve for the ensuing year were: President, Roland Bourne; Vice President, Walter Haase; Secretary, Eugene M. Reed; Treasurer, Norman Thrall.

A loving cup of unique design was presented to Chairman Bourne. It consisted of a funnel placed right side up on a cookie cutter. Two spoons graced the sides and the whole was suitably inscribed! Chairman Bourne accepted this token graciously and said he would cherish it as one of his dearest possessions, suitably inscribing it for the next president to succeed him!

Notes and Comments

"What Is a Speed Flash?"

"What is a Speed Flash?" the 4-page brochure of photoflash questions and answers continues to be in great demand according to the report of the Kalart Company, 58 Warren Street, New York City who are distributing copies of this helpful little discussion free to all who

write in for it. Interest in the subject of photoflash photography seems to have been whetted considerably by national prize contests conducted in recent months by the nation's leading film and lamp makers. A careful reading of "What is a Speed Flash?" is a good way in which to derive the utmost benefit from photoflash bulbs.

Sacramento Convention Marked Success

We are holding the presses for this note so it must be brief. The important and encouraging thing is that the convention held by the Associated Photographers of the Sacramento and San Joaquin Valleys April 18, and 19th was successful beyond all expectations. We are happy to be able to record that photographer, manufacturer, and dealer alike were more than satisfied. Credit must be given to President Covert Martin, Convention Chairman, Fred R. Schneider, Jr., Secretary, Harold McCurry, and their numerous enthusiastic assistants for the following worthwhile accomplishments.

1. A convention program that was interesting, practical and which was run off on schedule. (For program see April C.C.)
2. A comprehensive dealers and manufacturers display.
3. A registration of 195 photographers augmented by thousands of visitors from the general public.
4. A large display of prints by photographer-members of the Association, plus the U. S. Camera Salon. There were prints wherever you looked.
5. Attendance from all parts of the state. As far north as Yreka, as far south as San Diego, with at least one or two from the state of Nevada.
6. New ideas on convention management. A convention without fuss or feathers. No banquets, no official hotel, no limitations on program attendance other than the payment of a modest registration fee.
7. There were no appeals to exhibitors for funds—no passing the hat, and no deficits.
8. The promise of a bigger and better convention next year.

Hearty congratulations!

Central Photographic Almanac

Recent importations, as well as leading makes of domestic cameras, are described in the new Central Photographic Almanac and Bargain Book which is just coming off the press. There are one hundred and forty-four pages in this

newest addition to the Photographic Guide Book Field. Following is a partial list of eminent authors and authoritative articles included in the new Central Photographic Almanac: William Mortensen, Author of "Pictorial Lighting" and internationally-famous pictorial photographer, tells how he works his wonders. E. D. Benedict, Author of "Hodge Podge Photography" tells how to make money with the ordinary camera. Other articles on use of Miniature Cameras, Home Movie Cameras, Lenses, Tripods, Exposure Meters, Color Pictures, Indoor Photography and Complete Tables on Chemical Weights and Measures, make this new Almanac of interest to everyone who takes pictures.

Free copies are available, upon request, as long as the edition lasts. Address a postal to: Central Camera Company, 230 S. Wabash Ave., Chicago, Illinois. Please mention this magazine.

Bargain List

A publicity release from the Fotoshop, 136 West 32nd St., New York City states that interest in new cameras seems to be at flood levels since, for the first time in a few years the demand for new outfits exceeds the demand for used goods. Consequently, many very good "turned-in" bargains are to be had at the Fotoshop and a bulletin, just off the press, gives a complete listing of used equipment in cine and still cameras; lenses; enlargers; reflectors, etc. Write for it.

The Lux Exposure Meter

A new and very precise photographic exposure meter of the photo-electric type possessing the unique advantages of extreme compactness and light weight, the Lux Meter can be used as a light meter as well to determine the available light at home, in the office or the workshop.

Designed by Dr. B. Lange, a noted lighting authority, who is affiliated with the famous Kaiser Wilhelm Institute, the Lux Meter is precise in its performance, simple in operation and is unusually responsive to the slightest light fluctuation.

A diagram which translates the light values into their photographic equivalents of aperture speeds, Scheiner degrees and exposure time, is an auxiliary part

of this equipment and not included on the meter. This facilitates a rapid determination of light values as one need not manipulate or twist the meter in order to obtain the correct reading.

The Lux Meter is manufactured by Dr. B. Lange of Berlin-Dahlem, Germany and is distributed in the United States by Pfaltz and Bauer of 300 Pearl Street, New York who will be pleased to send interested readers further information on this unique device. This company also imports the Roland Miniature Camera.

Zeiss Ikon Exhibition

The second annual traveling exhibition of photographs as originated by Carl Zeiss Inc. in March of last year has been repeated this spring in a number of cities where it has proved to be a great success. Many thousands of visitors in various cities have enjoyed this remarkable collection representing the most varied fields and branches of amateur photography. Most of the pictures were made with miniature cameras but there also were some made with large size cameras. This collection, concentrating on candid photography, contains some high lights which nobody interested in photography would like to miss. The majority of pictures shown, however, demonstrates the work done by the average amateur photographer and as such it is particularly remarkable attesting to the high level of knowledge, skill and good taste attained in this branch of pictorial art by those who partly practice it in connection with their daily work and for many of whom it is merely a "hobby".

The Zeiss Ikon exhibition will visit further cities during May of this year as follows:

Pittsburgh, Pa. (originally planned for the end of March but postponed on account of the flood) Hotel William Penn, April 30th, May 1st and 2nd. Cincinnati, Union Gas & Electric Co. (Exhibition Hall) May 21st-23rd.

Open daily from 10 a.m. to 9 p.m. Admission free. Mr. Frank A. Dorner and Mr. E. Friedrich will attend in Pittsburgh and Mr. Dorner and Mr. E. Smerage in Cincinnati. They will gladly give information and demonstrate the extensive line of Zeiss Ikon cameras. Every-

body interested in photography is welcome.

Improved Lumiere Filmcolor

Although natural color pictures have always been of interest to the photographer, it has not been until recently that great interest has been shown in this branch of photography. Manufacturers have been keen to keep astride of this growing interest with the introduction of improved materials, and now we have been informed of marked improvements in one of the oldest and most popular color films on the market—Lumiere Filmcolor.

Photographers who have used this material in the past have been acquainted with the beautiful color transparencies it produces. However, they have been hampered in one respect—the speed of the material. This disadvantage has now been eliminated. The speed of Lumiere Filmcolor has been increased five times, so that now only twelve times greater exposure than that necessary for a film having a Weston speed of eight, is required. This will enable snapshots to be made at F3.5 1/15 second. And that is not all. The starch grain screen has been made more transparent; producing more brilliant results. Despite these improvements no change is necessary in the filters employed, and the developing technique. Also of great interest, is the fact that there will be no increase in price. This makes Filmcolor a most accurate and economical material for taking pictures in natural color. For further information regarding this product the reader is advised to write the R. J. Fitzsimons Corporation, 75 Fifth Avenue, New York City.

New Wollensak Head

Elected President and Treasurer of the Wollensak Optical Company at a Directors' Meeting, Friday, March 20th, J. G. Magin forecasts a favorable year for his Corporation and for the Optical Industry in general.

"Business with us during the year's first quarter has been well ahead of the same period in 1935," said Mr. Magin. "From all parts of the country orders covering our entire line are being received in larger volume.

"A new instrument will soon be announced to the trade and is expected to lift our sales to a new level before the year is over."

J. G. Magin, who has been active in the Company for over thirty years, succeeds in office the late Andrew Wollensak. Other officers elected at the meeting were Frank J. Wollensak, Vice-President; George H. Hawks, Vice-President; and Andrew A. Wollensak, Secretary.

The New Simmon Complete Enlarger

This is a new and finely constructed enlarger with many new features that appear to be of substantial convenience. An illustration is shown in the advertising pages. The manufacturers do not stress the point but it seems to us that here is an enlarger that is made to order for the traveling photographer. It is fully portable and complete in itself and with the case closed it could be handled almost like an ordinary piece of luggage. Write to **Simmon Bros.**, 5 Court Square, Long Island City, N.Y. for descriptive literature or see it at your dealers. We list below a few of the features of the machine.

Folding Cabinet which allows instant set-up, and equally quick fold-up for storage. Besides its great value as a space-saver, the cabinet is specially constructed to protect the entire equipment against dust, one of the greatest obstacles to faultless enlarging.

Electric Timer is the most unique and beneficial addition ever attached to an enlarger. Driven by the famous Telechron motor to insure dependability and accuracy, the Electric Timer can be set for any number of seconds or **fraction of a second**. A dial with illuminated figures, easily visible in the dark, keeps one posted for proper timing. This automatically prevents timing errors, and insures a consequent saving of papers and chemicals.

Built-in Dark Room Lamp adds to the completeness and convenience of this unit. Shining where it does the most good, the lamp eliminates the necessity of other lights at a distance. This feature is one of the most useful and pleasing to photographers.

Projector has a low voltage lamp, which in conjunction with a double condenser and special diffusing device, produces an intensely bright but properly diffused light. This reduces exposure time considerably and greatly minimizes the effect of grain. In this manner, amateurs can bring out a professional quality in their work.

Focusing Device has been designed with the care of a precision camera. It has 2 geared eccentrics which can be manipulated to insure the most minute clarity of the image. With such an accurate mechanism, nothing need be left to chance. Simple to operate, it produces results suggesting the greatest of skill.

Extreme Flexibility of the Projector is Effected by a Device Enabling the projector to make horizontal and vertical adjustments, as well as rotating on its support. In this way, enlargements of any one part of the whole negative can be made with ease.

Foth-Flex

An interesting observation in connection with the Foth-Flex 1936 twin-lens camera is the comment by the Home Camera Company that "No longer is the man who made the picture the mysterious Mr. X—the unknown quantity who pressed the bulb—but whose likeness and personality seems to have been dissolved amidst the redness of the darkroom and the anonymity of the album, for with a modern camera such as the 1936 Foth-Flex full provision is made for the picture-taker by a built-in self-timer, a dependable gadget which gives eight seconds in which to pose, pucker, pout, or primp." More about the Foth-Flex can be obtained by writing to the Home Camera Co., 129 W. 22nd St., New York City or by calling at your nearest complete photo shop.

Contest for Trick Photographs

The American Photographic Publishing Company, 428 Newbury St., Boston, Mass. is preparing a new book on Photographic Amusements. To illustrate the volume they are searching for unusual, trick, or stunt pictures of all kinds. To obtain these they have set up a contest and will offer ten prizes of \$25.00 each for the ten best photographs and articles

submitted before August 1, 1936. Write to the above address for a copy of the rules.

New Wold Air Brush Catalogue

The new Wold catalogue No. 43 shows the complete line of Wold Air Brushes and Sprayers with illustrations and full descriptive text. It also includes several pages of helpful instruction on how to use the air brush. The Wold Air Brushes are internationally famous for their precise construction, reliability, and long life. Write to the Wold Air Brush Mfg. Co., 2173 California Ave., Chicago, Ill., for your copy of the new catalogue.

Remarkable Close-Out Bargains

Voigtlander manufacturers of the world famous Vag, Tourist, and Avus film pack and plate cameras have found that they cannot continue production at present prices. Instead of continuing production at the high prices that would be necessary the firm has decided to close out the line. These three remarkably fine cameras are now being offered at bargain prices by Willoughbys, 110 W. 32nd St., New York, N.Y. As an example of the savings offered the \$87.50 Tourist can be had for \$55.00, or the \$52.50 Avus for \$32.50. Willoughby's will send you a pamphlet fully describing the three cameras, and giving complete lists of prices. Act quickly for these remarkable buys will certainly be snatched up without delay.

VereBest Booklet

The Photo Crafts Laboratory of H. O. Bodine and Associates have just issued what they modestly call a catalogue but which is in reality much more than that. It does list and describe the great variety of chemical and prepared developers, toners, fixers, cleaners, etc., which the firm offers but it also gives a remarkable amount of helpful information in its 48 interesting pages. There is an article on fine grain development by H. C. McKay, an article on The Miniature Camera by H. Crowell Pepper, that fine writer who begins a series of articles for **Camera Craft** in our June issue, complete set of fine grain formulas and much else. Write to Photo Crafts Laboratory, Wantagh, L.I., New York for your copy today.

Harrison's Print-In Backgrounds

A Print-In background is in reality a negative on film which carries a background image (in a great variety of design) and also contains a blank space for the head or figure of the portrait. To print, the portrait and background negatives are simply bound together and the two printed as if they were a single negative. S. Harrison, 456 Linden Blvd., Brooklyn, N.Y., have just issued a new catalogue for the spring and summer of 1936 which shows a large number of the designs which they offer. The firm also supplies seamless felt cloth for backgrounds or seamless spring roller shades for the same purpose. Full details and prices will be found in the catalogue.

Rabinovitch

Rabinovitch announces that only a few more students can be enrolled before his next course is filled and that subsequent to that the fees for his courses will have to be raised. Rabinovitch is an instructor who has had remarkable success in leading his students to the creation of original work, and his classes are kept small so that personal instruction is always assured. New Yorkers should not fail to visit his studios at 40 W. 56th St., New York, where interesting exhibitions are always on display.

A Friend is Gone!

You ask me to write a tribute to Laurence Morton. Me, whose pen has always been a shutter and a lens! How futile your request. Not even if I were a writer, rather than a camera man, could I translate in type the things I feel. You can't put into words the fineness of a man's soul any more than you can photograph it. No film has yet been created that is sensitive enough to picture that something in a man that makes him gentle, kindly, loving, considerate, loyal and of good cheer. Were there a code of ethics to be formulated for his craft, Laurence Morton worked hard and long toward its creation . . . and forever lived up to it! And to that great unwritten code of friendship, Laurence Morton was unflinchingly true, every day of every month of every year that he walked among us . . . leaving every man he contacted a finer person for having known him.

This much can be written, but with all our learning we have yet to coin the words that will truly express the character of men such as this friend that we have lost . . . Laurence Morton, a great photographer and a great gentleman.

Ralph Young.

New Rolleiflex Accessories

Right up to the minute in design are a new lens hood and graduated filter, brought out by the firm of Franke & Heidecke, for use with the Rolleiflex and Rolleicord cameras. The hood, of good depth and correctly shaped for the square format of these popular cameras, is fitted with a cam-actuated contracting grip arrangement which practically locks it to the lens mount. Provision is also made for holding the new 33mm. disc filters inside the hood. Supplied complete with a neatly made leather case this is a handsome and, we might add, a really necessary accessory.

Conscious of the fact that the usual sky filter has little if any effect when placed directly over the lens, Messrs. Franke & Heidecke have constructed their graduated filter so that it will go over the front of the lens hood; it is thereby kept at the correct distance from the lens so that it can be really effective. The filter slides vertically in a beautifully made holder and in use it is first adjusted with the aid of the finder lens; then it is transferred to the taking lens for the actual exposure. No increase in the normal exposure time is required.

For further information and prices, we suggest that you write to Burleigh Brooks, 127 West 42nd Street, New York City, and ask for the new edition of "Practical Accessories" to the Rolleiflex.

New Eastman Kodascope E

The Eastman Kodak Company announces a new projector which will be of interest to many because of its low cost together with features and performance usually expected only of top price machines. Of "pedestal" construction to permit easy adjustment of picture to screen, the projector is sold on a unit plan whereby one may buy the basic projector and then his choice of lenses, lamp, and carrying case. Thus a complete outfit may be purchased for prices from \$54.50

to \$63.50 with the carrying case at \$12.00 extra.

Optional equipment includes a choice of a 2 inch f 1.6 or 2 inch f 2.5 projection lens and 400, 500, or 750 watt lamps. For all ordinary projection with screen size of five feet and under the least expensive equipment, 400 watt lamp and f 2.5 lens, is adequate. The f 1.6 lens and 750 watt lamp are only needed when pictures larger than six feet wide are to be shown.

Burke & James News

Burke & James, 223 W. Madison Ave., Chicago, Ill., informs us that the popularity of the Korelle Reflex is growing at a surprising rate. This camera is of the reflex focusing type with focal plane shutter, and uses No. 120 roll film giving 12 2¼x2¼" pictures to the roll. The firm will gladly send you full descriptive literature.

We also learn that Mr. George A. Drucker, head of the firm has recently been honored by being elected an honorary member of the New York Photographic Dealers Guild. Our congratulations.

Mortensen Accessories

Upon publication of Mr. Mortensen's books "Pictorial Lighting" and "Projection Control" there was an instant demand for two items which he described as important to his methods. We are happy to announce that these two articles are now being manufactured in accordance with Mr. Mortensen's specifications. He has no connection with the manufacturer but has tested and endorsed his product and granted permission for their manufacture. Thus you may obtain the Blue-Gray Structure Filter (viewing glass) with a density carefully calculated to be best for the light intensity used with the Mortensen system of lighting, and also a specially designed aperture board for use in projection control. The aperture board can be adjusted to give openings of several sizes and shapes so that it is not necessary with this board to control the opening with the fingers. The articles are obtainable from Anton Schaller, 1145½ North Sycamore, Hollywood, Calif. Prices: Blue-Gray structure filter \$6.50, Automatic Aperture Board, \$5.00.

New Store in Baltimore

The Balto Photographic Supply Co., is just opening for business at 411 North Howard St., Baltimore, Md. The new firm is headed by George Coudert. In addition to complete photographic supplies the firm will have a public darkroom for the use of its customers, projection rooms for movies, and it will also make and process 16mm., and 8mm. sound and silent movies. Residents of Baltimore and neighboring cities are invited to inspect the new premises.

New Anderson Courses

Two unique summer courses in photography were announced this month by the University of California Extension Division. The courses, formed because of the enthusiastic demand for such work by San Francisco Bay region photography enthusiasts, will be given by P. Douglas Anderson, member of the University Extension faculty and a fellow of the Royal Photographic Society of England.

One of the courses, consisting of photographic field trips in the picturesque Yosemite Valley, will meet every morning for six days, beginning July 13. It is also planned to repeat this course for a second week, beginning July 20. In addition to the personally conducted field trips in the morning by Anderson, evening discussions have been planned, which will be devoted to a discussion of the problems of that day. No previous camera experience is necessary for entrance into this course. A twelve dollar fee will be charged, with adults taking the work making their own arrangements for hotel or camping accommodations in the Valley. Each of these classes will be limited to twenty members. Persons interested in making further inquiry about the course should communicate with the University Extension Division, University of California campus, Berkeley, California; or at the Extension Division offices in Oakland and San Francisco.

A series of field trips in photography, under Mr. Anderson will also be held on Sundays during June in San Francisco Bay region. Four field trips are planned with five evening sessions for comment and criticism. The first meeting in San

Francisco is scheduled for Thursday, June 4, from 7 to 8:30 p.m., at 540 Powell Street with the first meeting in Oakland on Friday, June 5, from 7 to 8:30 p.m. at 1730 Franklin Street. The two classes will join forces for the four Sunday field trips. Persons may register in this course for the Extension Division enrollment fee of six dollars.

Reunion of "Daddy" Lively's Students

Students of the Southern School of Photography are planning a reunion of all former students and friends of W. S. (Daddy) Lively at McMinnville, Tennessee the week of July 6th.

This reunion will be in Daddy's honor and will bring together students of this famous school of photography from the four corners of these United States. Each year scores of students visit the old school and this grand old man of photography who is now in his eightieth year and still active. Although the school has not run for a number of years, each mail brings requests for catalogs and information about the school.

There will be various forms of entertainments and a very instructive program by former students and the Eastman Kodak Company, which will send its best talent to make this gathering outstanding.

No student ever attended the Southern School of Photography but he learned to love this fine old gentleman of the South, W. S. Lively. Known to his many friends as "Daddy". For years Daddy has cherished the thought that some day a reunion such as this now being planned by some of his students, could be realized. He has spent the winter in Florida, and there among some of his former students this reunion was planned. Write to Virgil R. Boozer, Post Office Arcade, Sunrise Ave., Palm Beach, Fla. for details.

Kin-O-Lux

Kin-O-Lux, 105 W. 40th St., New York, N.Y. offer orthochromatic and panchromatic 16mm. motion picture films priced at \$2.00 and \$2.50 for 50 ft. including processing and the films are also given the Scratch-Proofing treatment which the film features. Catalogue "B" will give you full details regarding the films and the processing treatments. Write for it today.

Classified Advertisements

Rate 6 cents a word; minimum \$1.50 each insertion, prepaid.

OUTFITS FOR SALE

◆Graflex, Revolving Back, $3\frac{1}{4} \times 4\frac{1}{4}$, f:4.5 lens. Condition exceptionally good; has case. Real bargain for \$75.00. Examination privilege. F. D. Stoll, 104 W. Chestnut St., Louisville, Ky.

◆8x10 Criterion view camera, with holder, 16" R.R. lens, before the lens shutter; Model A Kodalite with diffuser; Eastman Home Portrait Reflector; No. 3 Gundlach sliding tripod. Complete outfit \$27.50. Jerome Brown, 1287 O'Farrell St., San Francisco, Calif.

◆Recomar 18, $6\frac{1}{2} \times 9$ cm., f:4.5 lens, compur shutter; 6 single film holders, film pack adapter, K-2 filter, distar lens, carrying case. Like new, list \$60.00, will sell \$30.00. Robert Normart, 1230 Fulton St., Fresno Calif.

◆2 Speed Graphic 4x5; 1 Speed Graphic 5x7; 1 Graflex Revolving Back 4x5; 1 Eastman View 5x7; Lens Kraus Zeiss Tessar f:4.5, 135 Btes in barrel; Cooke Anastigmat 5x8 f:4.5 in barrel Ser. II; Carl Zeiss Jena Tessar f:4.5, 18cm. in barrel; Bausch & Lomb Ser. VII f:6.8, $9\frac{1}{2}$ " front and rear element $16\frac{1}{2}$ " Volute Shutter; Smith Pinkham Portrait f:5 in barrel; Carl Zeiss Jena Tessar f:4.5, 21cm. in barrel; Plate and cut film holders; 2 Graflex magazines 4x5; 1 Enlarging camera 8x10;

PHOTOGRAPHS WANTED of highway bridges damaged or endangered by flood or ice conditions. Will pay \$2.00 for each print (glossy 5x7" or larger) that I can use, unrestricted, give structure's identification, location, date photographed. Unsuitable prints will be returned. **SAVE THIS ADVERTISEMENT.** Hottinger, 9 West 76th St., New York City.

WANTED

Used A, C, D and E Leicas to trade in on new model G Leica. Write in for liberal trade-in allowance.
 $2\frac{1}{4} \times 2\frac{1}{4}$ " used Rolleiflex, F:3.8 lens, **\$60.00**
Everready case

Miniature Camera Shop

1600 Post Street San Francisco, Calif.

CLEARANCE SALE

4x5 Auto Graflex F4.5, \$84.00. Eastman Duo 620 Camera with F3.5 Compur Shutter, \$39.50. Zeiss Ikon Exposure Meter, \$1.50. Heydes Cine Exposure Meter, \$2.59. Sept Camera, \$22.50. Elwood 5x7 Enlarger with reducer, \$39.50. Weston Leica Meter, \$14.50. Leica Projector with 13 extra spools and cases, \$29.50. 122 Roll Film Graflex, less lens, \$17.45. 4x5 Revolving Back series D with Dogmar $8\frac{1}{4}$ " F4.5 lens, \$109.50. 6x6 Rolleiflex F4.5 Compur shutter, \$39.95. What do you need in Still, Cine Equipment? Good bargains at all times.

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carrying cases and tripods. All for sale at reasonable prices. Apply letter, phone, or in person. Charles F. Betz, 188 - 17th Ave., San Francisco, Calif. Phone Evergreen 2320.

◆LATEST "1000 LEICA G", Summar 50mm. f:2 lens practically new, cost \$245.00 with case, sell \$180.00—immediate. B. Bonwitt, 449 Crestwood Ave., Akron, Ohio.

◆Practically new Eastman Recomar No. 18 with case. Had four months, used very little, \$40.00 C.O.D. C. H. Tanner, 807 E. Oregon St., Urbana, Ill.

◆Plaubel-Makinette half V.P., Delux f:2, \$65.00. Zeiss V.P., f:4.5 \$20.00. R.B. Auto Graflex, f:3.8 Graff-Variable $7\frac{1}{2}$ " \$90.00. Want Graflex "D", Leica equipment, 3A Zeiss or Voightlander. Otis E. Gardner, 408 Y.M.C.A., Denver, Colo.

◆9x12cm. Voightlander Avus f:4.5 Skopar anastigmat, double extension, compur shutter, film pack adapter, six plate holders. Very good condition, \$24.00. Fein, 630 West End Ave., New York, N.Y.

OUTFITS WANTED

◆Good used Zeiss Super-Ikomat "B" or Kodak Pupille. New Kodak Six-20, f:4.5 lens, and Miniature with f:2.9 lens for sale. Camerashop, Lavina, Mont.

◆Process Lens for color work, approximately 12 inch focus. H. L. Doolittle, 1520 Rose Villa St., Pasadena, Calif.

STEREO-MIRROR,

single picture stereoscope, a fascinating optical device for lovers of art, \$3.00 and \$6.00. Write
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TARGET Pistols, Rifles, Shotguns, Revolvers, Microscopes, Binoculars, Telescopes, accepted in trade at liberal allowances on any photographic equipment, motion picture or "still." Authorized representatives of Leitz, Zeiss, Eastman, Victor, Bell & Howell, and every leading manufacturer.

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DEALERS IN PHOTOGRAPHIC EQUIPMENT get your copy of **TRADE-IN VALUES** of Photographic Equipment by Earl T. Boaden now. Reduced in price from \$6.50 to \$3.25. Tells you quickly and easily the list price, what its trade-in value is, and at what price to resell it. \$3.25! Camera Craft Pub. Co., 425 Bush Street, San Francisco, Calif.

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CAMERA



"Portrait of Clyde Devinna"

19th Los Angeles International Salon

Warren Newcombe

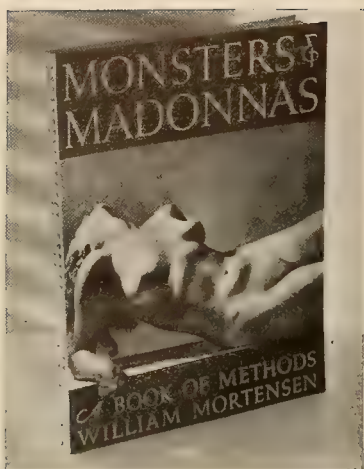
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Dec 1936

MAKING THE BROMOIL TRANSFER
NICAM PHOTOGRAPHY, PART I
SETS AND FOIBLES, PART III

PRICE 25c

William Mortensen
H. Crowell Pepper
H. C. Benedict, Ph. D.



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A BOOK OF METHODS

by

WILLIAM MORTENSEN

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- 2—Each print is accompanied by full technical data and a discussion of processes, mechanical, psychological, and esthetic by which the print was evolved. • Many tricks and devices are described that Mr. Mortensen has never before divulged. • Thus on the page facing each picture there appears a full discussion of the esthetic and technical considerations involved in its production.
- 3—In a six thousand word introduction Mr. Mortensen discusses the esthetics of photography, his approach to the medium, and his aims and ideals in photography.
- 4—Page size 9x12" with NEW type spiral binding, and an attractive board cover carrying a Photogravure reproduction. • Each picture fills the page except for a very narrow margin. • The pages are arranged so that no printing appears on the reverse side of any picture. • Thus pictures may be removed and framed without otherwise disturbing the continuity or completeness of the volume. • In several cases the type page carries a small illustration showing the picture which appears on the facing page as it was originally photographed.

Ready May 20th - - - Price \$4.00

Our first advertisement stated that all reproductions were to be in photogravure. Subsequent experiments have convinced Mr. Mortensen and the publishers that his pictures appear to better advantage in a special form of half-tone, so that process will be used for the book.

Ask for it at your dealers or order direct from

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The Bromoil Transfer Factors In Inking

William Mortensen

THE bromoil transfer process is one of the family of collographic processes—heliochrome, collotype, papyrotint, etc. They depend upon the selective tanning action of appropriate bleaches or sensitizers upon a colloid medium. This action may be produced directly by the action of light (as in the case of collotype) or indirectly through the presence of metallic silver (as in the case of bromoil). In either case, the tanning action of the bleach or sensitizer produces in the colloid medium, varying degrees of imperviousness to water. This varying imperviousness to water results, in turn, in the colloid repelling or accepting greasy ink in various degrees.

These are not recent processes, in principle at least. Collotype dates from 1855. And the selective tanning of a brom-silver image (the basis of bromoil) was known at least as long ago as 1892. Such advances as have occurred have been in *detail* rather than in principle.

Collotype, because it has been largely in the hands of skillful professional workers, is known as a dependable and beautiful process. The equally beautiful and much more flexible process of bromoil transfer, owing to the inept efforts of enthusiastic but unqualified amateur workers, has been subjected to criminal abuse.

Definitely, the bromoil transfer process is "not for children". Nor is it for the wealthy dilettante who, tiring of making bad bromide enlargements, seeks a more complicated and esoteric method of securing bad results. Unfortunately, a great deal of the writing about this process has been directed toward making the process "simple", and adapted to the talents of the casual worker. It is neither of these things. It may be learned and adequately used only by those capable of accepting it as a delicate and difficult process based upon strict procedure and skillful handling.

The process is dependent upon the accurate inter-weaving of a large number of factors—chemical, physical and mechanical. The intricacy of these relationships will presently be demonstrated in the working of two of the factors that concern the inking of the bromoil matrix.

Data on Frontispiece: Bromoil Transfer. Matrix chemically and actinically tanned. Full saturation. Hard scale of inks. Automatic and hand brush. Transferred onto Umbria hand-made paper.

Among important factors that affect the inking of the matrix in the bromoil process we may mention the following:

1. Type of emulsion.
2. Method of tanning matrix.
3. Kind of water used in bleach.
4. Length of soaking.
5. Pressure on swelled matrix previous to soaking.
6. Temperature of room.
7. Humidity of room.
8. Viscosity of ink.
9. Brush technique.

1. Two false premises have led workers in bromoil to much needless trouble. The first of these errors is the supposition that a paper which will work with hand inking is also adaptable to machine inking. As the electric brush has now largely superseded the hand brush in the early tedious stages of inking, the point is of much importance. The high relief and fragile emulsions of most so-called "Bromoil Papers" break down under the more forcible action of the electric brush. A thinly coated stock takes the ink equally well, and has resiliency to stand up under automatic inking.

This brings us to the second of the errors mentioned above. Despite demonstrations to the contrary, the superstition prevails that a high relief is necessary in a bromoil matrix. With this superstition in view, many so-called Bromoil Papers are made with soft fragile emulsions that swell enormously when soaked and thus produce an extremely high relief. The relief is a merely incidental phenomenon resulting from the tanning and soaking. The relief does not produce the image. The image is produced solely by the differing amounts of water in the matrix which cause the greasy ink to be repelled in differing degrees. Therefore, so long as the differing degrees of perviousness to water are created and retained in the gelatin, the amount of relief may be disregarded entirely.

2. The differentiation between the various areas in the image is made more marked if the matrix, after full chemical tanning, is subjected to additional actinic tanning. This increased differentiation results in easier and swifter inking. An actinically tanned matrix transfers its ink more readily and with less pressure than one that has received only chemical tanning.

3. It is preferable to use distilled water in compounding the bromoil bleach. The dissolved air usually present in tap water is deleterious. Nor, if the tap water is very hard, is it advisable to use it for soaking the matrix. Extreme hardness in water reduces the absorbent qualities of the gelatin.

4. The required time of soaking varies greatly with different emulsions. A matrix is regarded as fully saturated when it sinks to the bottom of the tray.

5. The inking quality of a matrix is improved by running it through the press just previous to inking. By this procedure the accidental excess water is expelled from the tanned portions and the hard ink is enabled to take hold immediately.

6. Warm weather is more favorable to inking than cold. It is most advisable to have means of heating the work room.

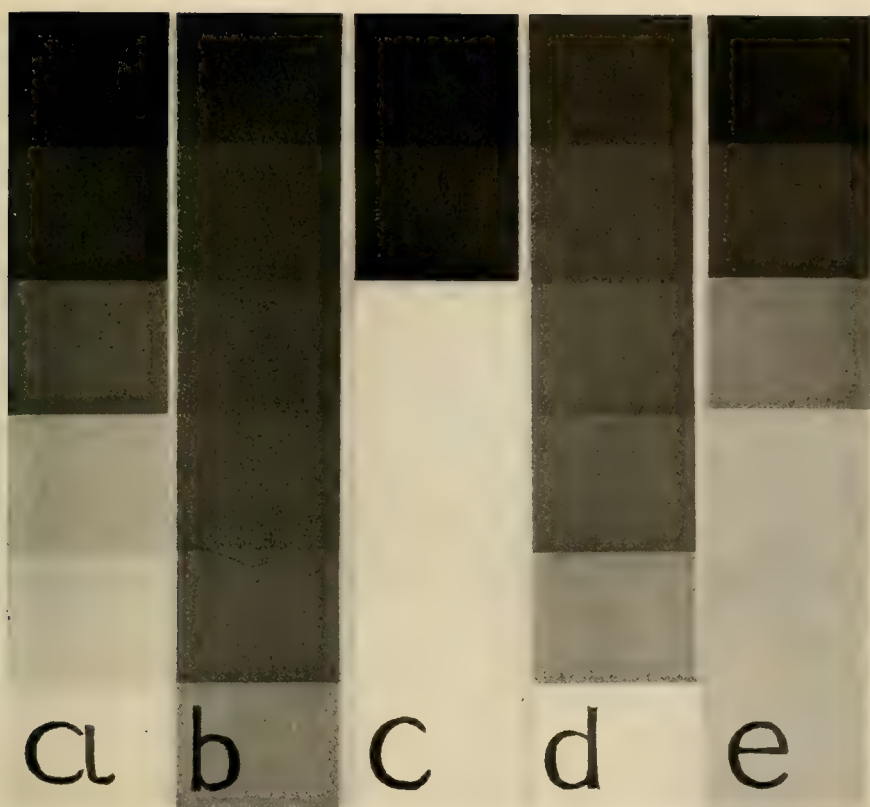


Figure 1. Half-tone aberrations introduced by permutations of factors of matrix saturation and ink viscosity.

7. Humidity is a more important factor than temperature. A high degree of humidity is necessary to retain the differentiations of moisture in the tanned gelatin and to prevent the matrix from drying out rapidly while being worked on.

8. A very delicate factor is that of the thickness of the ink. It is subject to complicated inter-relationships with most of the other factors. "Hard ink" and "soft ink" are merely relative terms. Though a progression from hard to soft ink is generally essential in inking any matrix, an ink that would be described as "soft" in one case would be a "hard" ink in another case.

9. The inking quality of a matrix varies widely according to the method in which the ink is applied. According to the manual technique, the ink may be "laid" in place, dabbed on, or pounded in. The electric brush, a valuable and time-saving device, has introduced further complications of technique. The "feel" of the brush, and knowledge of the



Figure 2. San Juan Capistrano. Short soaking and soft ink.

methods of using it, are to be gotten only by competent instruction and long experience.

An example of the interworking of these factors that lends itself with particular neatness to graphic illustration is the relationship between the degree of saturation and the viscosity of the ink. For the sake of clearness, I will consider only the extreme variations of each of these two factors — short soaking and extended soaking, soft ink and hard ink. All the other factors are assumed to be constant.

Obviously, there are *four* possible combinations of these two variable factors, viz.:

1. Short soaking with soft ink.
2. Short soaking with hard ink.
3. Extended soaking with soft ink.
4. Extended soaking with hard ink.

The working of these four combinations is illustrated in terms of the aberrations introduced into a scale of six half-tones, gradating from black to white. The ideal scale is shown in Fig. 1, a.

1. The first combination, that of short soaking with soft ink, results in a much shortened scale of pearly, veiled half-tones. (Fig. 1, b.) The scale is short, because the short soaking is able to establish but slight



Figure 3. San Juan Capistrano. Long soaking and hard ink.

differentiation between the various tones. Blacks and deep darks are missing, and the whites are veiled over. The effect is closely analogous to that secured by an over-exposed print in dilute developer.

2. The second combination, short soaking and hard ink, results in extreme contrast. The hard ink strikes immediately to the dark areas. But because the short soaking has created only a slight differentiation in tone, the accent blacks and the adjacent dark tones build up to an almost equal density. Beyond this point the scale falls away abruptly to a series of scarcely differentiated pale greys and whites. (Fig. 1, c.) This condition is typical of a large amount of amateur work in bromoil.

3. Extended soaking with soft ink, the third combination, produces a high-key effect. Owing to the long soaking, there is ample differentiation between the amounts of water in the various parts of the matrix. Hence there is the finest possible rendering of the lighter half tones; but (because of the soft ink) the darker tones are weakly rendered and there is a complete lack of accent blacks. With care in inking, however, the extreme high-lights may be kept clean. (Fig. 1, d.)

4. Extended soaking with hard ink produces a result that is in some respects the reverse of that produced by the third combination. The full differentiation, which is secured by the long soaking, is in this case realized

in the darker area, where the hard ink is principally effective. There is, therefore, good separation in the lower half-tones, and there are excellent dense accent blacks. The light areas, however, are mushed together. (Fig. 1, e.)

Knowledge of the permutations of these two factors, saturation of matrix and viscosity of ink, in the four combinations described above, is of definite pictorial use. In applying them to a landscape subject, for instance, various distinct atmospheric effects may be suggested. Thus these combinations provide a valuable method of pictorial control.

In the examples above, it was assumed that each matrix was inked with a single ink. In actual practice, of course, this is never done. *Two inks* are always used, in the usual sequence, beginning with hard and finishing with soft ink. But, in taking advantage of the control afforded by the combinations, inking may be begun with an *extra* hard ink and finished with an ink less soft than usual. Or inking may be begun with an ink *less* hard than usual, and be finished with an extra soft ink.

Figures 2 and 3 show the practical application of two of these combinations to a pictorial subject. Save for the hand-inked sky and a slight "hopping out" of the path in the foreground, no control has been exercised on these prints aside from that afforded by the factors of matrix saturation and ink viscosity. Both transfers were made from the same matrix.

Figure 2 makes use of the first combination of factors described above—short soaking and soft ink. The matrix was soaked for not longer than fifteen minutes (at 65° F.). The inking was begun with a much softened *encre machine* and finished with a nearly liquid *encre taille douce*. By the use of the two inks (both on the soft side) additional strength is obtained in the dark tones while still keeping the pearly quality and short scale that characterize this combination. (Fig. 1, b.) Properly handled, on a landscape subject, the combination of short soaking and soft ink produces a misty, pastoral effect, with a suggestion of early morning light.

The fourth combination—extended soaking and hard ink—was employed in making Figure 3. The matrix in this case was allowed to soak over night (also at 65° F.) and was completely saturated. The inking was started with the hardest *encre machine* that would take effect, and was completed with an ink of medium hardness. It is interesting to note that the "soft" ink with which inking was completed on Figure 3 was of about the same viscosity as the "hard" ink with which inking was commenced on Figure 2. By the use of the two inks it is possible to secure the contrast, bold blacks, and fine dark half-tones typical of this combination (Figure 1, e) and also to obtain improved separation of the lighter half-tones. The effect of this combination—long soaking and hard ink—is that of brilliant afternoon sun.

Practical Miniature Camera Photography

H. Crowell Pepper

Part I. Miniature Cameras

This is the first of an extensive series of articles by Mr. Pepper, which together will constitute a complete course in Miniature Camera Photography.—Ed.

THE photographic world today is miniature camera conscious. Whenever and wherever a group of men, interested in photography, foregathers the chief topic of conversation is the little camera, its possibilities and the problem its use has introduced. Why has the interest in photography received such an impetus during the past few years? Why have so many new clubs been formed by persons interested in the miniature camera? Is photography, as we older practitioners understand it, changed in any essentials? Suppose we examine the facts and pass judgment without bias.

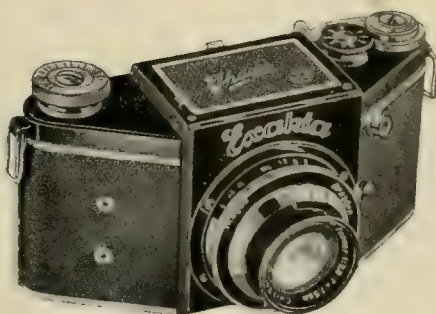
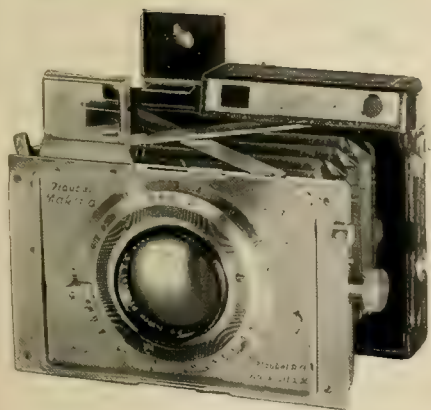
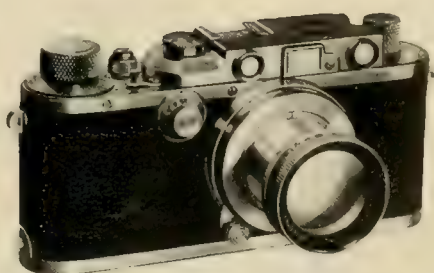
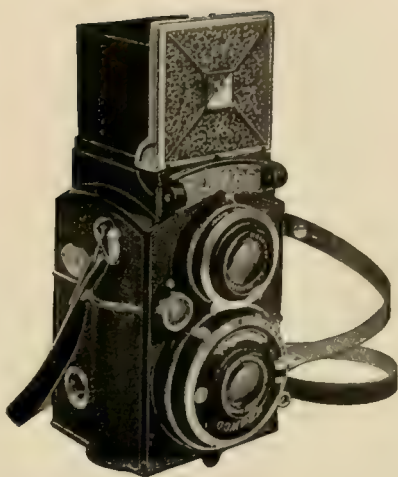
To many, any small camera taking pictures smaller than $2\frac{1}{4}" \times 3\frac{1}{4}"$ is properly classed as a miniature camera. In the main they are correct in their conclusion. To these photographers the chief advantages are compactness and cheapness of operation. If these were all or even the chief advantages the little camera would soon disappear, for the new problems, though simple to solve, would far outweigh the advantages. The true advantages lie in new fields of photography which the modern precision-built little cameras have opened, in the marvelous improvement in lenses, emulsions and processing equipment. We have long sought a universal camera, one which we could use for all types of subjects and under all lighting conditions. Until cameras of the Contax and Leica type were perfected our seeking was in vain. These cameras undoubtedly approach as closely as is possible the truly universal camera. Now we can own one camera which we can equip with wide-angle, normal angle and telephoto lenses with speeds ranging from $f:8$ to $f:1.5$. We may photograph in cramped spaces or secure a large image of an object far distant. Night photography with fast shutter speeds is an accomplished fact.

There is a general impression that the miniature camera is an instru-

ment of recent invention. They have been with us for many years and no single manufacturer deserves credit for their introduction or conception. About thirty years past a writer upon the artistic side of photography offered a fervent prayer of thanks that photographers were turning from small cameras to larger ones. He did not refer to cameras producing the present day small negatives but objected to the tendency towards the use of hand cameras making negatives $3\frac{1}{4}" \times 4\frac{1}{4}"$. In 1880 there was in use a camera making a circular negative about 36mm in diameter. About 1905 the forerunner of the present day little camera was introduced. In 1914 two cameras were offered using standard 35mm motion picture film and permitting 800 single and 400 double frame negatives with one loading. With each passing year the popularity of the small camera increased until today we have so many from which to select one suited to our particular needs the problem of selection has become a real one.

During the earlier days of the little camera the serious photographer would have none of them. They were generally used by the beginner as a cheap means of securing records of passing events. The reason is readily discovered. The lenses used were not particularly well corrected and when attempts were made to secure enlargements their quality was such as to make one give up in disgust. The same condition prevailed in the emulsions supplied. Fortunately some photographers realized the value of the little camera and its possibilities and persisted in their demands upon camera manufacturers for precision instruments, better quality lenses and when these came into being the film manufacturers soon realized the importance of bettering their emulsions. Lenses were re-computed and the aberrations corrected so that circles of confusion of $1/500$ th and $1/700$ th of an inch are now available permitting of great enlargement of the tiny negatives without apparent loss of quality. Film manufacturers began producing faster and faster emulsions containing smaller and smaller grain. Chemists and photographers began a search for new developing agents as well as the perfecting of combinations of present existing agents so as to prevent "clumping" of the grains in processing the new emulsions. Today the man using a miniature camera has at his command equipment and materials far superior to anything heretofore known. If he fails to produce results he has no one to blame but himself.

Photographers may be divided into three general classes; the beginner, who knows little but is willing to learn, the advanced worker who talks and talks and does nothing and the man who accepts the camera and equipment as a mere means to an end and actually produces pictures. True there are some new problems resulting from the use of the miniature camera, but much of the "bunk" one hears and reads is readily traceable to those occupying the second class. I have listened to many "learned" discussions of the merits of secret developers, grain, gamma, circles of confusion and other technical matters. While it is well to possess some knowledge of the problems involved, when our knowledge consists of a mental juxtaposition of incongruous ideas with



Typical Miniature Cameras

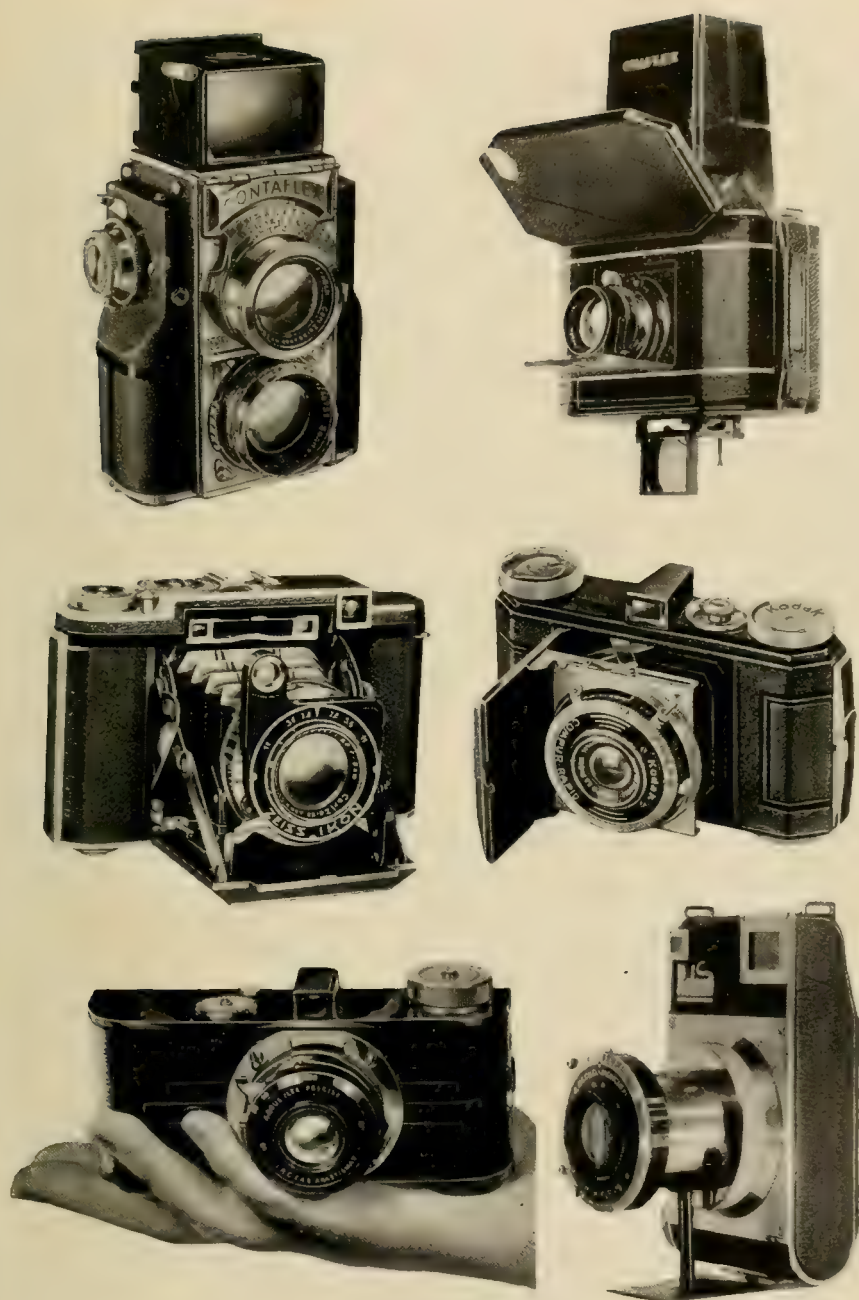
Reading from left to right. Top row, Rolleiflex, Voigtlander Superb; center row, Zeiss Contax, Leitz Leica; bottom row, Plaubel Makina, Ihagee Exakta. The cameras are not shown in exact relative size.

the sensation, but without the sense, of connection we are worse off than if we possessed no knowledge. Many of the discussions I have heard brought a realization of the need of a bit of "debunking" and I hope in this series of articles to place before my readers in a simple and logical way all the needful data required in the successful operation of the miniature camera.

The first thing for us to consider is the selection of a camera. You do not expect me to tell you which camera to buy for you realize the impossibility of this. I do not know your problems. All that I may do is to discuss the various types, telling you of their merits and shortcomings. We may divide our little cameras into four classes: (1) small rollfilm, filmpack or plate cameras making negatives $2\frac{1}{4}" \times 3\frac{1}{4}"$ or smaller, focused either by a set scale, an adjustment of the lens, or the use of a groundglass; (2) similar cameras of precision construction fitted with a range finder for focusing, supplied with one lens or permitting the use of various lenses; (3) small reflecting cameras, either of the single or twin-lens type; (4) twin lens cameras of the non-reflecting type.

Class No. 1. Within this division we find cameras taking from single negatives to thirty-six on a roll and sizes ranging from 24mm by 36mm to $2\frac{1}{4}" \times 3\frac{1}{4}"$. Some are provided with masking devices permitting two sizes of negatives to be made. They are provided with one lens and generally with a fixed bellows, requiring focusing to be done by moving either the entire lens or by a change in the separation of the lens elements. Focusing scales are provided and in the majority you must first guess or measure the distance of the object and set your scale accordingly. If you guess well your principal object will be in sharp focus, if not—well let me advise the use of a separate range finder if you use this type. These little cameras are well made and well worth the price asked for them but they are limited in scope. The lenses supplied with a few exceptions are not so fully corrected as one might wish, a fact soon realized when enlargements of more than eight diameters are desired. Here is a partial list which may prove of value to my readers: Zeiss Ikomats, Foth Derby, Dolly, Pupille (Eastman) and the Retina, Minifex (negative size $\frac{5}{8}" \times \frac{1}{2}"$), Piccochic, Voigtlander Virtus, and a group by Eastman Kodak Co. Baby Brownie, Vollenda, Six-20 Duo, and the pocket Kodaks. If you are interested in miniature camera photography and cannot afford the more expensive cameras do not hesitate to secure one of these.

Class No. 2. Cameras listed in this class range from fairly inexpensive instruments to the finest precision cameras ever built, e.g. the Zeiss Contax and the Leitz Leica. They range in negative size from 24mm x 36mm to $2\frac{1}{4}" \times 3\frac{1}{4}"$ and are equipped with accurate range finders. Many of them are supplied with lenses specially corrected to give the sharpest possible images permitting enlargements of thirty and more diameters with little apparent loss in quality. As a group the real advantage is found in the range finder. This is undoubtedly the greatest boon to photography. Out-of-focus pictures are things of the past. Its accuracy is far greater than visual observation on the ground glass and



Typical Miniature Cameras

Reading from left to right. Top row, Zeiss Contaflex, National Graflex; center row, Zeiss Super B, Eastman Retina; bottom row, Argus, Roland. The cameras are not shown in exact relative size.

many who find difficulty in focusing upon a ground glass have no trouble with the range finder. The range finder is coupled with the lens so that when the two images in this finder co-incide the lens is accurately focused. Many of these cameras such as the Zeiss Super Ikomats and Super Nettel use only one lens, though these lenses are of excellent correction and one may in the first instance buy either an f:4.5, or f:3.5 or an f:2.8. The latter is fast enough for most work done by the average photographer. The Super Ikomats are supplied with the famous Zeiss Tessar lenses of special construction since the focusing is actually done by a variation of the lens elements. Those who have any doubts as to the efficiency of this method will find their doubts set at rest after a trial. I made numerous tests to determine whether the difference between maximum and optimum focus was sufficient to affect the results secured. I found little noticeable difference and have no hesitation in thoroughly recommending these cameras. The proof lies in the fact that I use a Super Ikomat B as well as a Contax. These cameras are supplied with Compur shutters of the latest type except the Super Nettel which using an all-metal focal plane shutter permits a moving of the entire lens in focusing.

The Plaibel Makina II deserves a separate paragraph since its construction is quite different from most cameras. It consists of a front carrying the lens and Compur shutter, a fixed bellows and a back upon which is mounted a range finder. The front is connected to the back by struts which permit sufficient variation in the bellows length to focus. Focusing is coupled with the range finder. The negative size is $2\frac{1}{4}'' \times 3\frac{1}{4}''$ and plates, cut films, filmpack or roll film may be used. Three lenses are supplied, the normal being a 10cm f:2.9, a telephoto of 21cm, speed f:6.3 and a wide angle 7.3 cm speed f:6.8. In addition proxars may be used for close-up work.

We have been building up to a climax—to the truly universal type of miniature camera. There are two which I consider in this class, the Zeiss CONTAX and the Leitz LEICA. While these cameras produce negatives on standard 35mm motion picture film measuring 24mm x 36mm their quality is such that finished prints of 40 to 60 diameters may be made possessing wonderful quality. Any number of negatives from one to more than thirty-six may be carried in the camera. The focusing is done with a range finder of extreme accuracy coupled with the lens. Focal plane shutters are used giving exposures, automatic, from 1 second to 1/1000th second and bulb exposures of any duration. Various lenses are supplied with focal lengths ranging from 28mm to 500mm ($1\frac{3}{8}''$ to 20") and speeds from f:8 to f:1.5. The majority of the lenses are coupled with the range finder. For close-up work extension tubes are supplied and a special Contameter may be attached to the Contax permitting range finder focusing on objects $9\frac{3}{4}''$, 15" and 22". A plate back is also supplied for the Contax permitting single exposures upon plates or cut films. Every conceivable attachment is offered to make these cameras truly universal. We cannot consider them here but shall do so in our next article upon Equipment. We should state at this point,

however, that these cameras are complete in themselves and many who hesitate to purchase a camera of this type believing they must purchase a quantity of additional equipment should forget the gadgets. Many are not at all necessary except for specialized branches of photographic work. The true value lies in the fact that if required they may be had and one does not have to purchase a new camera. No matter what the subject or the light condition the owner of one of these modern precision cameras can make successful negatives. Many subjects which in the past were considered impossible to photograph may be easily and successfully "shot". Though the price may seem high we must remember the quality of the product. That the lenses supplied have been specially designed for this class of work and their corrections are the finest presently obtainable. It is in these lenses we find corrections for circles of confusion of 1/500-1/750 of an inch. Such lenses cannot be manufactured and sold on the same basis as the ordinary lens. Precision cannot be built into a camera except at additional cost.

Class No. 3. There are many persons who prefer a reflecting type of camera. Two types are supplied, the single lens and the twin lens. They make negatives ranging from 24mm x 36mm to $2\frac{1}{4}" \times 3\frac{1}{4}"$. The twin lens reflex was built to overcome the difficulty in focusing when the lens is stopped down and to permit the use of a between-the-lens type of shutter. There are a number of excellent cameras in this class from which to make a selection. The Pilot (3cm x 4cm). The Rolleiflex and Rolleicord ($2\frac{1}{4}" \times 2\frac{1}{4}"$) the Zeiss Ikonflex, Voigtlander Brilliant and Superb and the Welta Perfekta ($2\frac{1}{4}" \times 3\frac{1}{4}"$) and in a class by itself the new Zeiss Contaflex. These excellent cameras are, with the exception of the Contaflex limited to one focal length lens. Proxars may be used to shorten the focal length but no provision is made for longer focal length lenses. Good quality lenses are supplied with speeds up to f:2.8. The fine Compur shutter is usually fitted with speeds up to 1/500th second. They are not in any sense Universal cameras but will within their limits produce wonderful pictures. They have the advantage of permitting easy composition upon the groundglass, a feature appreciated by many workers.

The Zeiss Contaflex is a twin lens reflecting camera quite unlike any other presently offered. The negative size is 24mm x 36mm and thirty-six exposures are made upon a roll of 35mm film. The camera has an electric cell exposure meter incorporated in the body. Probably the greatest advantage is found in the metal focal-plane shutter, equipped with a delayed action mechanism and the camera may be fitted with lenses f:2.8, f:2 and f:1.5 with focal lengths of 2", $3\frac{3}{8}"$ and $5\frac{3}{4}"$. The viewing lens is a special f:2.8 Sonnar of long focal length giving an image upon a special "full illumination" plano-convex focusing screen. When using the normal 2" lens the image is two diameters, i.e. four times the area of the negative. The lens mounting is unique and of the greatest precision, a fact fully appreciated when you realize the viewing lens focal length is quite different from that of the different "taking" lenses, yet there is absolute accuracy of focus. Shutter speeds range from $\frac{1}{2}$

sec. to 1/1000th sec., and the winding of the shutter transports the film as with the Contax. All the limitations of the twin lens type seems to have been overcome in this remarkable camera.

Among the single lens reflecting cameras we find the National Graflex, the Exakta, the Noviflex. These cameras are fitted with mirrors for reflecting the image upon the ground glass, similar to the large reflecting cameras, and with focal-plane shutters. The first two named may be fitted with lenses of different focal lengths. The Exakta is unique in that the shutter gives automatic exposures from 1/1000th sec. to 12 seconds and ten lenses of various speeds and focal lengths are supplied. The negative size is $2\frac{1}{4}'' \times 3\frac{1}{4}''$. Little more need be said concerning these cameras. They are beautiful instruments and capable of the best results.

In the Fourth Class I shall merely mention one camera more for the sake of completion, since they have not become popular in this country. The Planovista-Prima and the Planovista. The first is a roll film direct vision twin lens folding camera giving eight negatives $1\frac{5}{8}'' \times 2\frac{1}{4}''$ on V.P.K. film. Various lenses in Compur shutters are supplied. The second is similar in construction except the shutter which is of the focal-plane type. I have examined these cameras but have not had an opportunity to try them.

I believe we have covered the present day market—at least we have mentioned the better known cameras. With this before you, you should be able to first determine the type your particular fields of photographic work will require. The dealers or manufacturers will gladly send you literature giving more detailed information. In closing let me add a word of advice. Before you purchase be sure the camera of your selection will answer future as well as present requirements otherwise you will shift from camera to camera and in the end the one finally selected will cost several times the amount you may afford to spend. With future requirements in mind buy the best you can afford. Give up the idea of special equipment until later.

My next article will cover the subject of equipment and I shall endeavor to point out the necessities in contradistinction to the luxuries. We shall consider what is required rather than what is desired.



A



B



C

Other things being equal the relative exposures for these three river scenes would be: A, $\frac{1}{2}$ sec., B, $\frac{1}{10}$ sec., C, $\frac{1}{25}$ sec.

If we assume, as we ought, that readers of "Camera Craft" are desirous of producing prints which in quality are above those usually classed as, for want of a better phrase, "the souvenir type", experienced workers will agree, that the acquisition of good technical ability and a knowledge of artistic principles are fundamental. If assimilated gradually, these will be the more easily retained until, in time, they become instinctive. Briefly, pictorial renderings of selected subjects require preliminary care in the selection of view-point; high, low or average camera height; suitable focussing and approximately correct exposure. Other things, as lighting, have of course, to be taken into consideration also; but the first-named are, one might say, under the photographer's control.

As approximately correct exposure is fundamental to good photography, its careful estimation should be one of the first aims. To the inexperienced it may seem strange that, given similar lighting conditions, exposure is not uniform for all classes or types of subject. When the reason for this, which I hope to explain by copy and comparative illustrations, is grasped and allowed for, there is no reason whatever why every negative should not be technically good. As the foundation of successful picture-making it is decidedly worth striving for.

In the determination of correct exposure four important factors should be remembered:—



D



E



F

Other things being equal the relative exposures for these three landscape subjects would be: D, $\frac{1}{50}$ sec., E, $\frac{1}{10}$ sec., F, $\frac{1}{5}$ sec.



G



H

Other things being equal the relative exposures for these two shipping scenes would be: G, 1/100 sec., H, 1/25 sec

1. Strength or brightness of light.
Taking 1 as the unit for bright sunlight, exposure, if the sun is shining through delicate clouds, should be half as much again; if diffused light, doubled; if dull, trebled; or if very dull, quadrupled, or more.
2. Type of subject; whether, for instance, it can be described as dark, medium or light tone; as well as its distance from the camera.
Briefly expressed, light-toned subjects impress the negative emulsion much more quickly than those in dark tones; as an example, an average snow subject may only require $\frac{1}{4}$ the relative exposure of an average landscape. The chief reason why exposure should be increased when the subject is close to the camera is because the light, has farther to travel from lens to plate or film. Double, or even more is sometimes necessary in such cases.
3. Lens aperture.
It will be obvious that, coincident with the use of smaller stops, less light enters the camera, therefore correspondingly longer exposures are required as compensation. The simple rule is, double for each succeeding reduction of aperture.
4. Sensitivity or speed of plate or film.
With slow and rapid plates and films available, exposures can often be adjusted to personal requirements; as, for example, to suit one's shutter speed. The speediest are invaluable for action subjects.

What appears at first glance to be a difficult problem can be conveniently solved by the use of an exposure meter or calculator. Of the various types on sale all have enthusiastic devotees. Many experienced workers, perhaps because of familiarity with their job and long proof of its practical value, find a calculator, of which the "Wellcome", is an example, all that they require. Carefully prepared tables according to whether the light is bright, diffused, dull or very dull are the basis of the system which, apart from questions of economy, has much to recommend it.



I



J

Other things being equal the relative exposures for these two snapshots would be: I, 1/250 sec., J, 1/50 sec.

With the well-known meters of the kind marketed by Wynne and Watkins, the exposure is indicated for any lens aperture according to the number of seconds it takes the light to darken a piece of sensitised paper to a standard tint when the instrument is held in the shadow of the body out-of-doors. Excepting that the paper is slower in attaining the depth of the standard tint, the meter is just as efficient for indoor exposures. Many workers, including myself, speed matters up by estimating an acquired paler tint as being, say, $\frac{1}{8}$, $\frac{1}{4}$ or $\frac{1}{2}$ of the full strength. The accuracy and compactness of this inexpensive watch-shaped model is really remarkable.

The familiar extinction type, with which the gauging of the exposure depends, broadly speaking, on the user's ability to read correctly clearly engraved numerals when the instrument is directed toward the shadows of the subject to be photographed, is useful for both daylight and artificial light work. Though more costly the various patterns available are deservedly popular. A later introduction which, by means of a photo-cell and the employment of a couple of separate scales, indicates, without calculation, the exposure necessary whether the light is good or extremely poor. This last type of meter is, of course, the most accurate but also unfortunately the most expensive.

To justify my statements that, other things being equal, (1) dark objects require much longer exposure than corresponding ones in light tones, and (2) that subjects close to the camera necessitate longer exposure than others of a like nature farther away, two sets of comparative illustrations, river scenes and landscapes, are here shown. If they are considered in conjunction with the reasons propounded, little or no trouble need be apprehended regarding the exposure problem as far as these types of subject are concerned. In river scene A we have, quite close to the camera position, the shadowed side of a rowing boat, and, on the left, other boats which, farther away, are lighter in tone. In B, a view from a camera position not so close to the river's bank, a greater num-



K



L



M

The light dress and surroundings made it possible for a relatively short exposure to suffice for K, $2\frac{1}{2}$ sec.; against an exposure, other things being equal, of 10 secs. for L. The darker tones of the lady's dress, fur and setting made all the difference. For M the exposure was 16 secs., at U.S. 2 (F:5.6) on a backed plate with equivalent speed of 16 degrees Scheiner (H.&D. 240). The picture was taken on a bright day but the long exposure was due to the fact that only a small amount of light could enter the sculptor's studio.

ber of boats are shown and more of the little town beyond, whilst in C the whole of the subject is definitely far distant.

Supposing that $\frac{1}{2}$ of a second is correct for A, the exposure for B, with the same negative material, lens aperture and strength of light would be $\frac{1}{10}$ sec., whilst $\frac{1}{25}$ sec., would be ample for C. Now examine the three landscape pictures featuring, from different viewpoints, a romantically situated Norman castle. If $\frac{1}{50}$ sec., is sufficient with a particular lens aperture for D, at least $\frac{1}{10}$ sec., would be necessary for E, and $\frac{1}{5}$ sec., for F to assure negatives giving prints with correct—that is natural—tone values; because, especially in the last named, the heavy shadows of the close-up foreground would take up all this extra time (about ten times as long as D) to impress the emulsion properly; for indeed not only is the town a long way from the camera position but the clouds, besides being very light in tone, are more distant still.

These sets of river-side and landscape prints provide opportunity for a few remarks on atmosphere, an intangible constituent in pictorial rendering, broadly implying that where dark objects are represented receding further and further from the eye they should, to convey the impression of distance, be shown in tones of diminishing strength. Similarly white objects are only really white when near the camera; as these recede into the distance, they too should, to suggest remoteness, be rendered more or less grey in tone. To represent this subtle, but entirely natural quality on canvas, artists have a big advantage, they can use colour; whereas photographers, limited to monochrome, usually secure it by, principally, differential focussing allied with choice of lighting and good technique.

The influence on the length of exposure, of dark and light objects has been stressed because, in pictorialism, the value of a satisfactory negative cannot be over-estimated. This being so, I go a step further and draw attention to the fact that as some colours are, photographically, much more active than others, it is wise to bear this in mind when making the exposure even though the employment of panchromatic (correctly-colour-sensitive) emulsions smooth out many difficulties in the rendering of colour subjects in monochrome. Amongst abnormally active colours, Blue and Violet may be cited; whereas Red, Dark Brown, etc., are exceptionally slow. The two prints of shipping scenes, G and H, will illustrate this point. If for the former, a racing yacht with white sails, an exposure of 1/100 sec., suffices; H, a fishing vessel with dark, reddish-brown sails would, with similar lighting, lens aperture, etc., require at least four times as long, i.e. 1/25 sec., because its sails, reflecting much less light than those of the yacht, do not impress the emulsion so readily.

Precisely the same rule operated in two more seaside snapshots of (I) a little girl playing with white dogs and (J) a party of jolly boys holding up strings of herrings. Under equal conditions of light, etc., exposure was only 1/250 sec., for I, against 1/50 sec., for J simply because of the difference in the tones and colours of the two subjects. The rendering of colour in monochrome and its value in picture making will, with appropriate illustrations, be dealt with in a future issue of this magazine.

The application of knowledge gained in outdoor photography enables one to control, in a great measure, indoor efforts, whether daylight or artificial illumination is employed. Exposure, for instance, can be considerably reduced in portrait and figure work by the use of light-toned costumes and backgrounds. For the comparative portraits K and L, 2½ and 10 secs., were respectively given to secure equal quality in the negatives. Lens aperture was U.S. 2 (F:5.6) with plate speed equivalent to Scheiner 21; 100 watt electric light and, for L only, a spot-light in addition. The exposure for the sculptor, illustration M, working on a white marble bust was rather long—16 secs., lens aperture U.S. 2 (F:5.6) on a backed plate equivalent to Scheiner 16 (H & D 240). The only light entering the studio was by a sky-light immediately above the bust; and in a subject with such tonal contrast, nothing but a well-backed plate would have been any use to obviate halation.

In conclusion, I strongly urge that when doubt exists, give a longer, rather than a shorter exposure. The latitude of plates and films is such that even with considerable over-exposure, presentable prints can be made from the negative. Under exposure, on the other hand, not only deprives the resultant prints of the possibility of good gradation, but the image lacks quality and richness.

Cinema Section

Edited by

William A. Palmer

Ideas For Vacation Filming

A SUMMER vacation with its week or so of leisure is the ideal time for the amateur movie maker to plan to do some sort of cine work which is more pretentious than that which can be fitted into odd times on week ends and evenings. The common variety of hodge-podge home filming, cine records of family events that just happen, and informal unplanned scenes of this that and the other event are all worth while, but the camera owner hasn't found the real fun in movie making until he has carried through a somewhat elaborate picture project. Of course there are many who do not want to have their cine equipment as more than incidental baggage on a vacation trip, to record the scenes and places visited for more vivid recollection at some later date. Movie making itself can be the main activity during a vacation and the problems that are presented and the cooperation from family and friends that are required are all valuable changes from the routine events of business.

To make movie making one of the more important events of the vacation requires that the subject matter of the movies be properly chosen. An interesting plan will be a fore-ordained success. In order to assist in the rather vital question of what to shoot we are presenting here three plans which may be used or at least will suggest similar ideas which can be used.

Plan 1.

Make a "theme" picture or motion picture essay. This entails choosing and concentrating upon one subject and showing that subject in all possible variations. The purely scenic picture can be made very much more interesting in this manner. For instance themes like "Trees", "Water" or "Clouds" furnish possibilities for a series of scenes of the same subject in different moods which will hold interest a good deal better than a series of disconnected though pictorially beautiful scenes. Incidentally this brings up the question of the pure scenic motion picture without story or continuity, merely a collection of well composed, well photographed scenes. Ordinarily this type of film in black and white is not very interesting unless there is some little thread to tie the scenes together. Also there seems little justification for making movies of the scenes in which motion does not take an important part. With color photography it is quite a different situation. Since the Kodachrome and the Dufaycolor processes are about the finest systems of color recording known there is plenty of justification for shooting movies of essentially "still" material just for the color alone without taking advantage of the additional ability of the cine camera to portray things in living motion.

If one spends his vacation traveling, one has ample opportunity for making a theme picture. As a matter of fact unless a great deal of film is used, a theme picture is the best type of travel film. So many things are seen and visited that it is next to impossible to show them all on film. So one particular subject which lends itself to motion pictures can be chosen and the various examples of that subject photographed as found in the different places visited. To illustrate, suppose a number of cities are to be visited. The theme of a picture could be the transportation systems of the cities. Of course in some cases the cities are so much alike that there would be little difference between the appearance of the various street car systems. But out here on the Pacific coast, a very fine picture could be made contrasting the cable cars and four-abreast street cars of San Francisco with the double deck buses and fast interurban trains of Los Angeles. Other good themes for travel film essays are public parks of cities, types of residence architecture, the slum sections, the financial centers or "Wall Streets", and the typical pedestrian. This last would be a wonderful subject to show contrast between Hollywood or Los Angeles and other cities. The typical pedestrian on Hollywood boulevard is a species to itself and bears little resemblance to any in other places. Municipal airports, the waterfront of coast cities and towns, and railway terminals are also good thematic material.

The theme idea is by no means limited to travel films. There are just as many themes around home. One of the most interesting films that we have seen that was taken around a home was a little theme picture entitled "Death in the Back Yard". This was a series of extreme close-up shots of spiders, their webs, and their snaring and devouring of flies. The shots were made with the aid of a titler, the frame for the title card serving as a finder to indicate the field of the lens and the plane of focus. Any sort of wild life that you may find in your garden may serve as the subject of a very worthwhile reel. In practically every garden there are macroscopic dramas being enacted which you can photograph such as the ants who keep their "cattle", the aphids, milk them much as we do our dairy herds and defend them against attack by beetlelike insects.

Flowers can furnish good film material especially for color film coupled with time lapse apparatus. (See "Flowers that Bloom on the Screen" in the November 1933 issue of CAMERA CRAFT for details of time lapse apparatus.) A reel showing some of the choice blooms unfolding, achieving their maturity and dying, each cycle taking but a minute of screen time, is a most fascinating sight and now with the new type "A" Kodachrome film such scenes are quite possible in full color.

If you happen to have a hobby other than amateur movies, or someone in your family has another interesting hobby, perhaps an "industrial" film explaining and showing important features of the hobby would be worth while. For instance, a person who does bookbinding or hand weaving, or most any of the manual arts, will be able to furnish excellent movie material.

Plan 2.

If you are going on a trip somewhere, make a good number of the regular scenes of the places visited and the interesting scenery. Then "dramatize" little sequences to put into the more prosaic parts. Make the auto trip an expedition and burlesque Martin Johnson, Admiral Byrd, or Frank Buck.

Dope out some wild yarns and get your family to act them out. Fake all sorts of trouble with the automobile. This sort of thing will require cooperation on the part of the family and other traveling companions and will entail considerable trouble and planning for you, but be assured that the additional labor will bring dividends in increased audience interest in your completed film.

As an example of a little dramatized episode to insert into a motor trip the following continuity is given:

Scene No.

- | | | |
|----|------------------|---|
| 1 | Close-up | Rear wheel as auto is speeding along highway. (This is a shot that can be made by mounting the camera in a board which in turn is clamped to the running board of the car by a wood clamp. The camera can be run at 8 frames per second to increase the apparent speed of the auto.) |
| 2 | Close-up | Dad driving. Pleasure shows in his face. He is enjoying the trip. (This shot and others like it can be made by mounting the camera tripod on the front part of the car, two legs lashed to the front bumper and the third leg lashed to the steering column with the left side of the hood opened.) |
| 3 | Close-up | Back seat. Mother and 1 or 2 children enjoying ride. |
| 4 | Extreme Close-up | Bent nail lying in roadway. |
| 5 | Close-up | Rear wheel as in scene 1. |
| 6 | Close-up | Dad as in scene 2. |
| 7 | Close-up | Rear wheel. The tire is flat or nearly so. Dad as expression changes. He realizes that all is not well. Not too much consternation shown, just resignation. He applies brakes to stop car. |
| 8 | Close-up | |
| 9 | Long shot | Car as it is brought to a stop Dad gets out followed by others. Mother and kids go back to examine the tire while Dad takes off his coat. |
| 10 | Medium shot | Dad as he takes off his coat, lays it over door and gets tire tools from under front seat. Walks out of scene toward rear. |
| 11 | Medium shot | Rear wheel. Dad comes in with jack and tire tools. Stoops down and starts to jack up car. |
| 12 | Medium shot | Mother and children watching. |
| 13 | Close-up | Dad stooping under car trying to get jack in place. Has difficulty and starts to "talk to it". |
| 14 | Close-up | Mother hears mutterings and decides she and children better take a little walk. They walk away. |
| 15 | Medium shot | Dad continuing his work. Fade out and fade in on. |
| 16 | Medium shot | Dad tightens last nut on the wheel. Lets car down off jack. |
| 17 | Long shot | Mother and children returning. |
| 18 | Close-up | Dad just finishing putting on his coat. |
| 19 | Close-up | Tire which has just been put on going flat. |
| 20 | Close-up | Dad sees tire, eyes open wide as he pauses for a moment to take in the situation. He is about to say something with a good deal of feeling when we cut to. |

- | | | |
|----|-------------|---|
| 21 | Medium shot | Mother and children walking. Mother stops abruptly as though she has heard something, turns children about and the three retreat in haste. Fade out and fade in on— |
| 22 | Medium shot | Mother cautiously peering around tree trunk, children behind her holding on to skirts as if in fear. |
| 23 | Medium shot | Dad holding tire pump, disheveled, grease on face as well as very sour expression. He impatiently motions for others to come on. |
| 24 | Medium shot | Mother and kids quickly obey as if they don't care to risk any added displeasure. |
| 25 | Medium shot | All get in car. Dad hurriedly pulls on coat slams hat on head dented and crooked. He starts car with a jerk and they are off. |
| 26 | Close-up | Dad driving. Intense gloom shows in his face as the scene fades out. |

This sequence probably won't fit your particular needs but it is a good example of the type of foolery that will pep up an amateur film marvelously. Moreover it is a good lesson in breaking a comparatively simple sequence up into many short scenes and angles rather than trying to portray the subject matter in a few long scenes.

Plan 3.

Get the family, friends, or the neighborhood children together and make a real photoplay. A photoplay takes a great deal of time and effort but is certainly worth all the pains it may have caused in production.

Choose or invent a simple story with few elaborations or side plots and subject matter that is primarily action. Remember that the regular feature length photoplay usually has a plot of a short story and therefore the average amateur photoplay of perhaps one reel should be merely an incident. But that incident can be very interesting and very well done.

It is wise not to have very many main characters, for large casts become cumbersome. Three or four main characters are plenty. You, the producer-cameraman-director should think the picture out thoroughly, deciding upon each scene and how it should appear in the finished film. Write each scene out, as the scenes in the above sequence are indicated, so that when on location you have definite instruction to give on all points. Many times, of course, it will become necessary to alter the planned continuity, but never make the mistake of trying to work out the scenes on the spot without previous planning or you surely will get tangled. Remember also to keep the acting restrained, for amateur cine stars are inclined to "emote" too violently.



"Hardrock Randall"

Virna Haffer

Advanced Medal Print

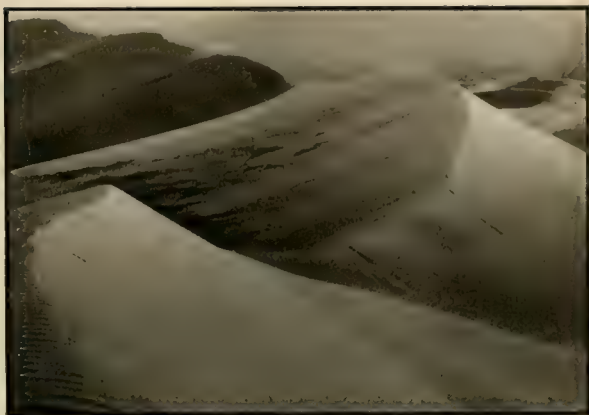
■ Obviously this is a picture which will either be enthusiastically acclaimed or damned in no uncertain terms. All will agree that the face is beautifully photographed but the trimming at the top will either seem just right or altogether wrong. It seems to us that our jury sensed this and, since they approved of the picture, placed it first because they realized that a luke warm or half-way position could not be logically defended. One's reaction to this picture will depend largely on his basic conception of the function of Art. If one looks primarily for beauty in the more limited sense of the word, and feels that the traditional forms of composition are nearer to being laws than guides he will resent this picture because there is nothing of beauty as he understands it and because of the violence which it does to the accepted forms of composition. The modern attitude lays greater stress upon the desirability of a wider, more vital, and more contemporary function for Art. There is the feeling that Art should be an integral part of our daily lives, not something apart. It seems to us that this picture is made in that spirit and that the artist's purpose is to shock the observer with the hardness and the determination shown in this face. Admittedly the trimming is something of a shock in itself. Does this contribute to the total impact of the picture? We think it does, many won't. A narrow black border would help to partially bridge the gap at the top.

At any rate it's a very interesting picture and guaranteed to start an argument in any company.

Data: 4x5 Korona View; 5½" lens; about 2 sec. exposure with lens stopped down, on E. K. SS. Pan; 4 1000W mazdas. Prints will be exchanged with other prize winners in these competitions only.

Second Award
Advanced Class

■ Mr. Shrader continues to find very interesting and pleasing forms in the sand dunes which he photographs so beautifully. We like the picture but believe that the most fruitful point for discussion concerns one or two aspects of the composition. The eye may move into the picture from either the lower left or lower right (the choice depending largely upon the habits of the individual observer) but in either case moves directly to the peak of the foreground dune which is a very strong point in the picture. There appears to be a slight gap in the movement of



"Sweeping Sands"

R. Owen Shrader

line at this point for the eye must make a little effort to achieve the abrupt turn to the right in order to follow the delightful swing of the dune in the middle distance. It is this dune which should constitute the principal interest, but as we look at the picture it seems that the two dunes are too nearly equal in strength to allow for the best pictorial balance. If a camera position slightly higher and a little to the left were possible the desired adjustment might be obtained.

Data: 4x5" Graflex; 8¼" Zeiss Tessar; 1/10 sec. at F:18, on Agfa S.S. Plenachrome, in DK-50; print on Illustrator Spec., in D-72, partially toned. 10x12" prints on 14x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"The Jaywalker"

John Muller

Third Award
Advanced Class

■ This interesting picture provides a striking example of the power which a comparatively small object, strategically placed and of intrinsic interest, has to balance a multitude of large masses. Observe that the small figure carries greater pictorial weight in the picture than the large masses of the cars which surround it. We may also note that the imaginary movement of line set up by the direction in which the figure is moving counters the larger and more positive lines set up by the rows of autos. There are also elements of drama or humor present depending upon how one chooses to look at the picture.

Drama because we may consider the isolated figure as symbolic of our civilization, threatened and hampered as well as helped, by machines of its own creation. The humorous approach seems the more obvious however and the artist has titled the picture in that vein. We can hear a chorus of masculine voices saying, with a little chuckle; "Now isn't that just like a woman?" The more important point is that either as drama or humor the effectiveness of the picture depends to a great extent on the isolation of the figure. Were there more than one figure the picture would be robbed of its punch. Again we see the value of simplicity in construction.

Data: Leica; Elmar F:3.5; 1/100 sec. at F:8, on E. K. Panatomic, in L-76; early afternoon with bright sun; Defender Velour Black J, in D-72.



"Big Research"

Hal Brown

is simple, real and straight forward. What parent seeing this picture could escape the thought that the development of his son's mind might be greatly helped by the interests which a microscope could arouse? This is not to imply that the picture is not equally effective as a pictorial photograph. In fact it amounts to saying that it is an important test of any artistic effort that it convey its message clearly, concisely, and with a certain subtlety. The composition is fine and carefully worked out as is evidenced by the placing of the glass graduate to fill what would otherwise be a disturbing vacant space.

Data: Zeiss Contax; 135 mm. Sonnar; DuPont Superior, in P-Diamine-Glycin; Agfa Brovira paper in Amidol.

Fifth Award

Advanced Class

■ Mr. Lawhead has made good use of the long hair possessed by this attractive model but it must be observed that the very flat lighting which he has used is not calculated to bring out the flowing lines of that hair. The lighting works out nicely on the figure except in one respect. A "Donut" light was used such as was described by Mr. Fred P. Peel in *Camera Craft* for December, 1933, and June, 1934. Readers of those articles will recall that Mr. Peel pointed out that it was necessary to use a light behind the translucent background to eliminate shadows and to emphasize the dark outline which this kind of lighting gives. Also the figure is placed close to the background and if the rear lighting is not present a cast shadow is shown that defeats the purpose of the lighting. Mr. Lawhead has used the rear lighting but has not succeeded in making it effective on the upper part of the figure, with the result that a faint shadow is apparent on the background running from the breasts around to the back of the head. On the lower part of the figure where the rear lighting is more effective this shadow is not apparent.

Data: Leica D; Agfa Super Pan., in Sease 3; Donut light; Agfa Brovira, in M. Q.



"Sandra"

John Lawhead



"On The Ways"

Raymond B. Collerd

Amateur Medal Print

■ The reader will hardly be able to appreciate the full beauty of this picture because it is impossible to reproduce the marvelous luminosity which Mr. Collerd has obtained in his print. It is this luminosity plus a third dimensional quality that makes the boat appear to loom out of the print as if it were straining to be under way that constitute the major attractions of the picture. As a composition the thing is extremely and delightfully simple, consisting almost entirely of the one boat, nicely placed, plus the second boat which functions only to fill what would otherwise be an awkward blank space. We have never been able to see the logic behind the frequent criticism that pictures made in this spirit, or with this sort of technique, are necessarily devoid of meaning or emotional qualities. Especially so when those same critics will go into ecstasies over a shot of an old world cottage with a splash of sunlight here and there. Where is the great difference? Too often, we fear, it lies largely in the personal preferences of the critic rather than in any fundamental artistic merits or deficiencies in either type of work. The parties on both sides of this controversy are guilty of a good deal of wishful thinking, and therefore it behooves the developing pictorialist to proceed cautiously and refrain from shouting allegiance to one cause or the other until he has discovered for himself the sort of expression that truly appeals to his nature.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex Series D; 13.5 cm. Zeiss Tessar; $1/10$ sec. at F:11, 5:30 P. M. clear day; Agfa S. S. Pan., in DK-76; Agfa Brovira medium glossy, in Dassonville M. Q. 8×10 " prints on 14×18 " mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Second Award

Amateur Class



"Nude"

Wilson D. Ellis

body. If this arm had been shown with greater solidity and roundness we would like the picture much better.

Data: $2\frac{1}{4} \times 2\frac{1}{4}$ " Rolleiflex; 35 mm. Zeiss Tessar; 1/25 sec. at F:3.5 on E. K. Panatomic in DK-76, by four photofloods; Agfa Brovira Royal medium, in D-72; printed through Dial Bromoil Texture Screen. Not for sale. Prints will be exchanged with other prize winners in these competitions only.

Third Award

Amateur Class

■ This young lady appears to us to be consciously sitting for her portrait. Camera consciousness, usually irritating in humans, seems to lend an attractive element to pictures of animals for the same reasons that any trick performed by animals is amusing in direct proportion to the degree of resemblance it has to human actions. For this same reason we do not object to the rather unusual pose, even though it does not appear to be very natural to a dog. It should be observed however that Mr. Rosenthal has handled his subject with restraint. He has not perched her precariously on a chair with a pipe in her mouth or inflicted any other of the innumerable indignities constantly visited upon pets of all kinds. The costuming of animals robs them of all their natural dignity and grace, and is little short of ridiculous from an artistic point of view. The present arrangement of the lettering is not a particularly happy one since it does not conform to any of the structural lines. Because of its bulk and the fact that it carries out to the edge of the print it is unduly prominent. If we must have it, it would be better to use a



"Minerva"

J. S. Rosenthal

(Continued on Page 300)

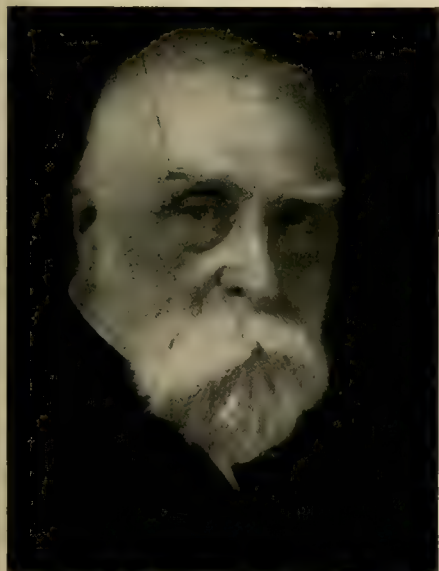
Fourth Award
Amateur Class

■ It is truly surprising how much interest a touch of snow can give to tree forms (or other objects for that matter) that in themselves would hardly constitute sufficiently attractive picture material. The moral: winter is the time to look for shots of this kind. It is quite evident from this print that Mr. Desme has not only learned how to make a good negative, he has also learned how to make an even better print, and that is what really counts. This print is blue toned, and to our way of thinking is made much more attractive because of the toning. The purest of the "Purists" deny the legitimacy of toning, but we cannot see that a toned print is any less photographic because of its color. The important thing is that the subject matter of the picture must definitely call for the tone imparted to it. We often receive requests for a good blue toner. In our opinion the Gold Chloride-Thiocarbamide (also known as Thiourea) formula is easily the best. The formula appears on page 578 of our December, 1935 issue.



Robert Desme

Data: 9x12 cm. Maximar B; 1/50 sec. at F:8, with K-2 filter; afternoon in January; E. K. Panatomic film pack, in M. Q.; Veltura DL. in M. Q. toned with gold chloride and thiourea. 8x10" prints on 14x18" mounts may be obtained at the price of \$4.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Dr. Perkins"

J. Owen Campbell

Fifth Award
Amateur Class

■ Mr. Campbell's portrait is simple, dignified, and consequently very much in keeping with the character of his subject. The one weakness of the print is an excessive graininess that destroys the rendition of flesh texture that would otherwise appear to be well rendered. Judging from his camera, he must have used at least a $3\frac{1}{4} \times 4\frac{1}{4}$ negative so that the coarse grain can hardly be charged to great enlargement. Of course grain can be caused by many factors, but, judging by the data given, we are inclined to suspect that the unusually long development time, possibly coupled with too rapid drying, might be the cause. The only valid reason that we know of for prolonging the developing time is to obtain increased contrast. It is true, we believe, that with proper lighting and exposure it is impossible to over-develop a negative so far as the matter of contrast is concerned. However, if one dilutes the developer and then prolongs the developing time he is merely balancing two

opposing factors one against the other to no advantage.

Data: Speed Graphic; portrait lens; 1/30 sec. at F:4, by two photofloods; Agfa Super Plenachrome, in D-76, diluted, developing time five hours; E. K. P. M. C. in D-72. 11x14" prints, mounted, may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Monthly Competition

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: Hal Brown and John Lawhead, for the Los Angeles Camera Club; R. Owen Shrader, for The Pack Rats; and John Muller, for the Pictorial Photographers of America.

The following won points for their clubs in the Amateur Class: Wilson D. Ellis, for the Miniature Camera Club of Oakland; J. Owen Campbell, for the Norfolk Photographic Club; and Raymond B. Collerd, for the Photographic Society of San Francisco.

The following prize winners have no club affiliations: Virna Haffer, J. S. Rosenthal and Robert Desme.

Contributing Clubs

Amateur Camera Club of Buffalo	Norfolk Photographic Club (Va.)
Appleton Camera Club (Wis.)	The Pack Rats (Pasadena, Calif.)
Bellingham Camera Club (Wash.)	Photographic Guild of Philadelphia
California Camera Club (San Francisco)	Photographic Society of San Francisco
Concord Camera Club (N. H.)	Pictorial Photographers of America
Fort Dearborn Camera Club.	Stamford Camera Club (Glenbrook, Conn.)
Golden Gate Miniature Camera Club (San Francisco)	Suburban Camera Club of Cincinnati, Ohio
Japanese Camera Club (San Francisco)	Taft Camera Club (Calif.)
Little Rock Camera Club (Ark.)	Washington Pictorialists (D. C.)
Los Angeles Camera Club	
Miniature Camera Club of Oakland (Calif.)	

Standing of Clubs

Large Clubs Advanced Class		Large Clubs Amateur Class	
Fort Dearborn Camera Club.....	18	Golden Gate Miniature Camera Club.....	15
Pictorial Photographers of America.....	12	Pictorial Photographers of America.....	9
Photographic Society of San Francisco	5	Miniature Camera Club of Oakland.....	5
Los Angeles Camera Club.....	3	Photographic Society of San Francisco	5
Montreal Camera Club.....	2	California Camera Club.....	4
		Camera Club of Ottawa.....	3
Small Clubs Advanced Class		Small Clubs Amateur Class	
The Pack Rats	20	Riverside Camera Club.....	7
Whittier Camera Club	3	Washington Pictorialists	4
Washington Pictorialists	2	Omaha Camera Club.....	4
East Bay Camera Club.....	1	Camera Club of Long Beach.....	3
		Calgary "Y" Camera Club.....	2
		San Jose Camera Club.....	2
		Norfolk Photographic Club.....	1

(Continued from Page 298)

much thinner letter and space it across the top of the print, allowing it to be interrupted by both of the ears.

Data: Kodak Pupille; 45 mm. Schneider Xenar; 1/25th sec. at F:4.5 by daylight 2:00 P. M. in January; E. K. Panatomic, in DK-76; Defender Velour Black I in D-64; printed through Mortensen texture matrix No. 2. Not for sale. No exchanges.

Club Notes

Forthcoming Exhibitions

Seventh Chicago International Salon of Photography. Address Alex J. Krupy, Chairman, Salon Committee, Chicago Camera Club, 137 N. Wabash Avenue, Chicago, Illinois. Closing date June 15, 1936. Entry fee \$1.00 for 4 prints, July 23 to October 4, 1936.

Paris XXXI International Salon of Pictorial Photography. Under the auspices of the Societe Francaise de Photographie. Address, Societe Francaise de Photographie, M. E. Cousin, 51., rue de Clichy, Paris, France. Closing date June 30, 1936. Entry fee 25 francs. Limit 4 prints. October 3 to 18, 1936.

First International Photographic Salon in Karlsbad. Address Mr. Hugo Heyer, Schulgasse 26, Karlsbad, Czechoslovakia. Closing date June 18, 1936. Entry fee Kc 30. Limit 6 prints. July 18 to August 9, 1936.

Third Annual Photographic Exhibition of the Yonkers Camera Club. Address John Learie, Exhibit Committee, 67 Linden Street, Yonkers, New York. Closing date July 3, 1936. Entry fee \$.50. Limit 4 prints, mounted on 16x20" stock. Westchester County residents are invited to exhibit. July 12 to July 26, 1936.

81st Annual Exhibition of the Royal Photographic Society of Great Britain. Address, The Secretary, The Royal Photographic Society, 35 Russell Square, London, W. C. 1, England. Closing date July 31, 1936. No entry fee, but return postage must be prepaid. September 12 to October 10, 1936.

Exhibition of Pictorial Photography of the Buffalo Camera Club. Address H. W. Schonewolf, Buffalo Camera Club, 528 Elmwood Ave., Buffalo, New York. Closing date August 6, 1936. September 6 to 27, 1936.

The Photographic Society of Bangalore All-India Exhibition of Photographic Art. Address S. Lakshminarasu, Honorary Secretary, The Photographic Society of Bangalore, No. 6, F. Street, Fort Bangalore City, India. Closing date June 25, 1936. Entry fee One Rupee for first print, Eight Annas for each additional. July 19 to 22, 1936. Open to residents of India only.

Second International Focus-Salon. Address Director Focus Foto-Salon, Focus, Ltd., Bloemendaal N. H., Holland. Closing date August 10, 1936. Entry fee 2,5 Guilders. Limit five prints, must be unmounted. September 12 to 27, 1936.

Fourth International Salon of Pictorial Photography. Address Fotoklub Zagreb, Masarykova 11, Zagreb, Yugoslavia. Closing date August 20, 1936. Entry fee \$1.50. Limit four prints. October, 1936.

Second International Exhibition of the Union of German Associations of Amateur Photographers. Address "Rhenus" Transportgesellschaft m.b.H., Zu Handen der Ausstellungsleitung der II. Internationalen Schaw der Amateurfotografen, Frankfurt, A.M., Messegueterhalle, Germany. Closing date August 15, 1936. Entry fee, \$1.00, limit six prints, unmounted. September 26 to October 11, 1936.

P. S. A. Western Meeting

A meeting of the Western group of the Photographic Society of America will be held in Los Angeles June 13th and 14th.

This meeting is being held in conjunction with the showing of the 15th All-American Salon sponsored by the Los Angeles Camera Club and hanging at their galleries during the month of June.

Vice President R. L. Van Oosting of the Photographic Society and a committee from the Los Angeles Camera Club are preparing a program starting at 1:00 o'clock Saturday with a dinner in the evening and a review of the All-American Salon on Sunday.

This will be the first time that members of the Society have had a get-together on the west coast and it is hoped that a large

number of members will be able to spend the week-end in Los Angeles meeting their fellow members and enjoying the Salon.

If members contemplating being in Los Angeles for this meeting will notify Mr. Van Oosting, care of the Los Angeles Camera Club at 2504 W. 7th St., Los Angeles, as soon as possible it will greatly facilitate matters concerning the planning for this event.

New Jersey State Museum Salon

All recognized amateur photographers of New Jersey, and the New York and Philadelphia Metropolitan areas are cordially invited to exhibit in the New Jersey State Museum's Invitational Photographic Salon, to be held at the New Jersey State Museum, Trenton, N. J., from June 7 to July 5, inclusive.

The exhibition is being arranged by the Loan Committee of the Metropolitan Camera Club Council, of New York. All photographs must be sent to Captain Frank Liuni, chairman of the Metropolitan Camera Club Council, Room 1469, 140 West Street, New York, N. Y.

St. Joseph Camera Club

At the annual meeting of the St. Joseph Camera Club held April 16th in the Pen-nant Cafeteria, Omar J. Murphy, Jr., was elected president and John A. Duncan was elected vice-president for the coming year. Ralph E. Crandall was re-elected secretary-treasurer. At the annual dinner held in conjunction with the annual meeting, Mr. Seymour Cronk, a member of the Camera Pictorialists of Kansas City, gave a talk on bromoils. It is requested that all communications be directed to the secretary, at 917 So. 9th Street, St. Joseph, Mo.

Sierra Camera Club

Sacramento has long been without a camera club, but this condition has been remedied with the forming of the Sierra Camera Club of Sacramento. The club's first meeting was held April 7th with nineteen enthusiastic amateurs present. New members are being added daily.

Meetings are to be held in the future in the banquet room at a local restaurant on the second Tuesday and the fourth Thursday of each month. Print discussions are to be a feature of each meeting. Anyone wishing to become a member can do so by leaving their name with the club's secretary, Elliott Bowdoin, 1030 K St., Sacramento, Calif.

Metropolitan Camera Club Council

On April 27th, thirty-five persons representing thirty-three camera clubs met in New York City at the invitation of The Telephone Camera Club of Manhattan and formed The Metropolitan Camera Club Council. This new organization is designed to provide services not now provided by any other organization such as a Speakers' Bureau, a Loan Exhibit Committee which will provide exhibits of from 10 to 100 prints, a Committee which will help in the formation and fostering of new clubs and the guidance of individuals in joining clubs and a committee which will

arrange for joint activities for two or more clubs.

The Loan Exhibit Committee is now making arrangements for conducting the New Jersey State Museum's Invitational Photographic Salon of 75 prints which will hang in Trenton from June 7th to July 5th.

Until further notice, communications should be addressed to: Frank Liuni, Temporary Chairman, 10414 111 Street, Richmond Hill, N. Y.

The Tripod Club

The Tripod Club of the Brooklyn Central Y. M. C. A. has inaugurated a new policy of meeting on the first and third Thursdays of the month instead of alternate Thursdays as heretofore. The first meeting of the month they have a guest speaker, and the second meeting of the month is devoted to regular business, print exhibit, and general discussion. On Thursday, May 7th, Mr. Edward Alenius, "World Champion Amateur Photographer," gave an enlightening talk in connection with an exhibition of his prints; and on Thursday, June 4th, Mr. Walter Dreicer will speak on composition. Men and women interested in photography are invited to attend this meeting.

North Arlington Camera Club

The North Arlington Camera Club meets every Wednesday, at 8 P.M. at the Lincoln School in North Arlington, N.J. Visitors are welcome to attend.

Monthly competitions, in which the members' prints are exhibited, are held on the first meeting of every month. At the end of the contest, prizes will be awarded to the three members who have received the largest number of points throughout the contest.

During the summer months, the club's outings were held at several scenic spots in New Jersey. It was suggested that they be continued throughout the winter months.

The club recently set aside one of the business meetings in order to attend the U. S. Annual Salon in New York.

Address all correspondence to the secretary: Mr. S. Russell, 10 Pershing Place, No. Arlington, N.J.

Camera Craft Traveling Salons

The Camera Craft Traveling Salons are currently on exhibition as follows:

Group I

Lincoln Camera Club, Lincoln, Nebr., June 1 to 14.

Camera Pictorialists of Kansas City, Kansas City, Mo., June 18 to July 1.

Group II

Portage Camera Club, Akron, Ohio, May 22 to June 3.

Hamilton Camera Club, Hamilton, Ohio, June 6 to 8.

Photographic Society of Cincinnati, Cincinnati, Ohio, June 11 to 21.

Camera Club of Cincinnati, Cincinnati, Ohio, June 23 to July 5.

Group III

Calgary "Y" Camera Club, Calgary, Canada, May 28 to June 4.

Solano Camera Club, Fairfield, Calif., June 22 to 28

Group IV

Chicago Camera Club, Chicago, Ill., June 1 to 30.

Group V

Camera Club of Ottawa, Ottawa, Canada, May 23 to June 5.

Hamilton Camera Club, Hamilton, Canada, June 9 to 22.

Regina "Y" Camera Club, Regina, Canada, June 26 to July 2.

Group VI

St. Paul Camera Club, St. Paul, Minn., June 1 to 10.

Missouri Photographic Society, St. Louis, Mo., June 15 to 28.

Fort Dearborn Camera Club, Chicago, Ill., July 1 to 31.

Group VII

Newark Camera Club, Newark, N. J., May 14 to 29.

Camera Club of Brooklyn Edison Co., Brooklyn, N. Y., June 1 to 5.

Utica Camera Club, Utica, N. Y., June 9 to 22.

Syracuse Y. M. C. A. Camera Club, Syracuse, N. Y., June 25 to July 8.

New Club

This is to announce the organization of the Westchester Pictorialists Camera

Club. The officers are: Arnold Copperman, President; Stanley Blitzer, Vice-President; Max Glantzman, Secretary, Librarian.

All amateurs are invited to attend our regular Wednesday evening meetings at 701 Prospect Avenue, The Bronx, New York. Beginners are taught in our well-equipped dark room. Correspondence and visitors are cordially invited.

Hawthorne Photographic Club

Among the active clubs in industrial institutions is the Hawthorne Photographic Club at the Western Electric Works in Chicago. This group meets every month and it includes amateur movie makers as well as amateur artists of the still camera. Reviews of films taken by members, salons made up of member contributions or traveling salons are prominent features of these meetings. Films and prints are discussed at meeting with reference to technical problems and composition.

Officers recently elected for 1936 include D. L. Beckham, president; C. E. McCoy, vice-president, and R. M. Tabbert, secretary. Committee chairmen are M. Brown, salon; K. A. Kjeldsen, studio; G. S. Hemsted, technical; C. W. Wyman, publicity, and B. Zahradka, librarian.

New Club

On March 5 the Columbia Camera Club was organized with the following Officers elected: T. M. Harvey, President, and L. B. White, Secretary and Treasurer. Charter members are Alvin G. Gardner, I. K. Hodges, T. M. Harvey, A. B. Jones, M. J. Price, F. Carlisle Roberts, Henry R. Smith, J. E. Sprott and L. B. White. Club address is P.O. Box 1371, Columbia, S.C.

Meetings will be held semi-monthly, the second and fourth Tuesdays of each month, and the objective will be to promote interest in photography, exchange of technical information, assistance in solving photographic problems that members might have, and good fellowship amongst the amateurs in that city.

Association News

1936 Winona School to Offer Broadest Program of Its History

For thirteen years the Photographers' Association of America has conducted without a break its annual school of photography at Winona Lake, Ind. Not intended for beginners, though beginners who are willing to acquire certain preliminary instruction from professional photographers in their home cities prior to the course can be admitted by special arrangement, this is really intended for the advanced amateur or photographic employee who wishes to round out his experience and become a practical all-round photographer. To an even greater extent it is a post-graduate course for the practising professional photographer who wishes to brush-up his work in the light of the latest and most modern methods. The school is not run for profit, which accounts for the very low tuition fees. Living expenses at Winona are extremely low, and quarters and meals can be had at prices to suit even the most limited purse.

The commercial course will be held for three weeks, from July 6 to 25, inclusive. The instructor-in-chief will be Edward J. Cook of the Kaufmann & Fabry Studios, Chicago, Ill., whose courses at Winona of several years ago are still remembered by the students as the high points in the history of the commercial course. Mr. Cook gives his personal promise that this will be the finest commercial course ever held by the School. It will include commercial photography in all its branches, both inside and outside the studio, and in addition three days devoted specifically to illustrative photography. Not more than 60 students will be accepted for this course and the tuition fee is only \$60.00.

The portrait course will be in charge of the Director of the School, William Gerdes, only pupil of internationally

famed Pirie MacDonald, Photographer-cf-Men, of New York City. Years of training under Mr. MacDonald have made Mr. Gerdes a portraitist of note and in addition he has unexcelled ability as an instructor. Assisting Mr. Gerdes for three days each will be three internationally known portrait photographers: Charles Aylett, Toronto, Ont., Canada; W. O. Breckon, Pittsburgh, Pa.; Hillary G. Bailey, Indianapolis, Ind. Little need be said about these men or their work. The portrait course does not limit itself to camera work, but covers all features of the portrait studio. The tuition fee is \$75.00 for this course and not more than 75 students will be accepted.

All in all, this indicates a red-letter year for the School, and fortunate will be those who can make the time available and spend the ridiculously small amount for tuition. For the prospectus, which goes into considerably greater detail than is possible here, write the Executive Manager, P. A. of A., 501 Caxton Bldg., Cleveland, Ohio. Those who are wise, however, will send their reservations at once, without waiting for the prospectus. The first reservation, for both courses, was received early in February. Reservations should be sent to the same address, accompanied by a remittance of \$10.00 if for one course, \$20.00 if for both courses. These down-payments are deducted from the tuition fee.

CHICAGO CONVENTION

Hotel Stevens

August 24 - 28

Write P. A. of A., 501 Caxton Bldg.
Cleveland, Ohio, for particulars.

Notes and Comments

Nicholas Haz Summer School of Composition

At the close of last summer the writer received several letters from individuals who had taken Mr. Haz's summer courses at Woodstock, N. Y. All spoke with great enthusiasm of the help that they received. What seemed most significant was that each felt he had found a new direction, a new enthusiasm, and a new understanding of photography as a medium of expression. From this it seems clear that Mr. Haz's teaching strikes directly at what is perhaps the most common and most fatal weakness to be found among photographers, namely that they have no clear cut idea of what they are trying to do with their photography, and because of their lack of direction they find themselves unable to "see," unable to discover, the pictures they would like to make. No teacher could possibly perform a more valuable service than to clear away such a confusion. Consequently we are happy to announce that Mr. Haz will conduct his summer courses again this year. Each course lasts one week and is complete in itself. The courses will continue for eleven weeks beginning June 22, 1936. The fee per course is \$25.00. For full information write to Nicholas Haz, 54 West 74th St., New York, N. Y. After June 13th his address will be Black-hear Cottage, Ohayo Road, Woodstock, Ulster County, N. Y.

Oakland's New Camera Shop

Photography has traveled far since we first pulled off the lens cap, waved it around our heads just once for sunny days and twice for cloudy days. No small part in the revolutionary changes of photography which have followed down through the years to our present miniature precision equipment, has been played by the amateur.

It is with this background in mind that CAMERA CORNER announces its service to the public. All the advertised lines of still and movie cameras, lab, and working materials for the advanced amateur are carried.

In charge of the store is Doris Rogerson, who has served East Bay enthusiasts for eight years and has helped them to solve many problems. Miss Rogerson is a member of the Oakland Miniature Camera Club and a class teacher of photography at the Piedmont High School.

A Photo Salon located in the Balcony of CAMERA CORNER is featuring as its first hanging, a one-man show by John Paul Edwards.

A complete photo finishing plant in the basement insures quality and service in developing, printing, enlarging or copying.

Be sure to drop into CAMERA CORNER, 431 14th Street, Oakland, California, and meet Miss Rogerson and her assistants.

Master Method

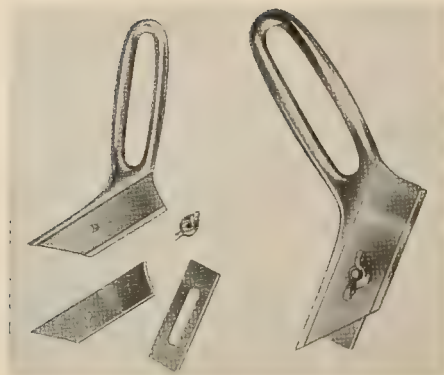
Instruction in photographic technique through twelve lessons which can be studied at home during odd times are offered by Master Method, 218 E. Superior Street, Chicago. As an introduction, the first lesson will be sent for \$1.00, giving a chance for one to see for himself what the course offers.

George Murphy Issues New Catalogue

We have just received the new catalogue of George Murphy, Inc., 57 East 9th St., New York. This catalogue, which consists of 225 pages, is most complete, listing all kinds of supplies for amateurs and professionals. There are included not only apparatus and materials of American manufacture but also many products imported from abroad.

Appoints Central Camera Co. Sole U. S. Agents for Mentorett, Episcopo and Pilot Cameras

The Central Camera Company, 230 South Wabash Avenue, Chicago, Illinois, has been appointed exclusive agent for the United States for several imported cameras, among them being the Episcopo 35MM Still Projector, The Mentorett Synchronized Reflex and The Pilot Pocket Reflex Cameras.



Angelus Utility Cutter

The illustration will give a much clearer idea of the handy nature of this convenient tool than words could possibly convey. The handle is of polished aluminum, and when the cutter is not in use the blade slides into the handle. The metal frame fits the hand so that great pressure can be easily exerted when needed. The cutter uses heavy weight Durham Duplex or Gem blades, and is strong enough to cut heavy wall board or light veneer wood. The cutter is distributed by Eastman Kodak Stores, Inc., with establishments in Los Angeles, San Francisco, San Diego, Oakland, Seattle, Tacoma, and Portland on the Pacific Coast, and in all major cities throughout the country.

"If You Are Considering Photography . . ."

The Rochester Athenaeum and Mechanics Institute, Rochester, N. Y., deserve a public vote of thanks for performing a much needed service in first class fashion. Many a young person is attracted to photography as a means of earning a livelihood but it is only with the greatest difficulty that he or she is able to obtain reliable information as to the possibilities which the field offers, the sorts of jobs available, the income which may be expected and the means of getting started. Personal inquiries most likely brought complete discouragement at the start, or elicited a rosy picture of fabulous incomes that could only result in disappointment. This pamphlet, written by Mark Ellingson and C. B. Neblette, gives an honest and

accurate picture of the actual situation as it exists today. Anyone planning to enter photography should certainly read this pamphlet, which may be obtained from the above address for the sum of ten cents.

What Sort of Pictures Do Editors Want?

The above question is one which constantly plagues the would be free-lance photographer. Now the editors of the Daily Mirror, one of London's most prominent "picture papers," have gone to the trouble to prepare a six-page illustrated pamphlet for the expressed purpose of answering that question. They have sent us a quantity and these we will gladly mail to any interested party who will send a three cent stamp. First come first served.

A Correction

FOTOSHOP, 136 West 32nd Street, New York, wishes to take this opportunity to correct a regrettable error which occurred in their film advertisement appearing in the May issue of CAMERA CRAFT. The price of two rolls of FOTOSHOP Rapid Panchromatic Film was stated to be \$5.50 whereas it should have been \$7.00.

Agfa Ansco Introduces New Film

A new and unusual photographic material, which greatly simplifies duplication work, has been announced by Agfa Ansco Corporation of Binghamton, N. Y. This new material, Direct Copy Film, is a radical departure from the conventional type of photographic emulsions in that it produces copies of negatives, positives and other transparencies directly and in a single, uncomplicated operation.

The simplicity and practicality of Direct Copy Film extends the application and usefulness of copy negatives and duplicating work to many fields. It makes quantity printing more economical, since exposure can be made from several duplicate negatives at once to reduce the time and effort required for exposure, development and handling. Valuable negatives may be safely filed away for future use and printing may be done from a duplicate made on Direct Copy Film. Enlarging and re-

duction work are other fields where Agfa Direct Copy Film proves itself extremely useful. Direct Copy Film may also be used to improve the contrast of negatives that are too dense or too flat to produce good prints.

The quality of Direct Copy Film that is most startling to the user is the film's unusual reaction to light. The unexposed film develops up black, while parts which have been exposed to light develop up with a clearness and transparency proportional to the amount of exposure. This remarkable behavior is accounted for by the fact that the Direct Copy Film emulsion takes advantage of the "solarization" effect. Most films also show this result to a slight extent when very greatly overexposed. In Direct Copy Film, however, this characteristic has been extended and the accuracy of tone reproduction is comparable to that of regular photographic films.

The emulsion of Direct Copy Film which has this unusual ability of reproduction in the region of solarization is treated during manufacture to produce a maximum density of silver throughout the film upon development. Further exposure given when a duplicate is made prevents black silver particles from being formed during development. Thus, clear parts of an original which pass nearly all the light are reproduced by correspondingly clear parts in the copy. The full range of tonal gradations between black and white is reproduced in this same manner.

Agfa Direct Copy Film is handled very much like ordinary negative material. After exposure it is developed in a conventional film developer, rinsed, fixed in an acid hardening fixing bath, and washed, before being hung up to dry. The emulsion speed is about equal to that of contact printing paper, which allows ample control of exposure and permits the use of bright red or amber safelight illumination in the darkroom. The emulsion of the film has a rather brilliant gradation which makes it possible to improve the contrast of flat or dense originals. At the same time it is possible to make Direct Copy negatives or positive having the same gradation as the original.

Direct Copy Film is made by Agfa

AnSCO Corporation in Binghamton, N. Y. It is available in a variety of sizes, packed as cut film. A similar material prepared especially for X-Ray workers is being supplied under the name "Direct Duplicating Film."

Jury Selects Pictures For "U. S. Camera—1936"

The Judging Committee for "U. S. Camera — 1936," consisting of Edward Steichen, chairman, Arnold Genthe, Valentino Sarra, Remie Lohse, Lejaren Hiller, Ira Martin, M. F. Agha, Alvin T. McCauley, and Rockwell Kent, met at the Biltmore Hotel, New York City, on April the 3rd, and made the final picture selection.

The Committee was unanimous in its feeling that the pictures submitted, and the ultimate choices made, were far superior to last year's group and that "U. S. Camera—1936" will be a better book. It will again contain the work of approximately two hundred American photographers. A color section will also be included featuring the finest in color photography.

Last year's edition of 15,000 copies was sold out shortly after publication. This year 25,000 copies are being printed. There will not be a reprint.

Now 8mm Kodachrome

There has just arrived the long hoped for and eagerly anticipated announcement that Kodachrome film would be furnished for 8mm cameras. The Eastman Kodak Co. has been working on the problem of improving the process so that the detail on the small 8mm images, which are only one-quarter the area of 16mm frames, can be sufficiently fine. Now they have solved this problem and the film is available to all owners of 8mm cameras which will take the regular "double" 8mm film, which is used in a 16mm width until processing is complete, when it is slitted to form two 8mm lengths.

As in the case of 16mm Kodachrome, the 8mm film needs no filters or special fast lenses for ordinary shots and may be projected on any 8mm projector without special attachments. The new film will be found to be most satisfactory when recording close-ups and medium shots, for in

these types of scenes the colors show with greater brilliance and the natural softening of detail as compared to 16mm film is not so apparent. It is certain that Kodachrome will make possible a new standard of 8mm projection because the images, being in a dye instead of silver, are grainless.

Kodachrome 8mm is furnished for the time being in only the regular emulsion for daylight use and artificial light use with a Filter for Photoflood. It is sold for \$3.75 per 25 ft. roll (equivalent of 100 ft. 16mm) and is processed free of charge at the Rochester plant only.

Tuma-Gas Paper

We are advised of a change in distributor for the Tuma-Gas photo paper. In the future this paper will be represented by F. Petzholdt as sole representative, under the firm name of the Tuma Photo Paper Co., 1170 Broadway, New York.

Handbook on Etchadine

A very useful handbook of instructions on the use of the Etchadine products is published by the Jamieson Products Co., 219 Avenue F, Redondo Beach, Calif. This booklet, which is sold for 15c, explains the methods of controlling negatives and prints by the use of Blendoil and Lineoil which are very convenient reducing mediums for etching and reduction. A new Etchadine product, Telluradine, which is a bleach toner for brown or yellow tones, is also explained and its use described.

Critical Enlarging Service

Everyone knows the difficulty of obtaining individual treatment and artistic manipulation when depending upon outside photo finishing for enlargements. It is likewise difficult to acquire a real understanding of picture making under such conditions, as it is impossible to know the respective parts which negative technique and print technique play in the making of a good picture. The opportunity to obtain quality enlargements at a reasonable price along with some pointers on technique and composition should be a distinct help to photographers anxious to improve their work but not possessing

darkroom facilities of their own. . . . Herbert Antoine, 450 Ellis St., San Francisco, California, is offering such a service, at a most reasonable price.

Prismatic Focussing Device

The Beira miniature camera marketed by the C. P. Goerz American Optical Co., 317 C East 34th St., N. Y., has a novel focussing device in the form of a small prismatic telescope which shows an enlarged section of the field. Critical focus for all distances up to 3 ft. can be made instantly since the telescope is coupled with the Goerz lens and there is no need to translate readings of the range finder to the focussing scale. The Beira uses standard 35mm film cartridges and is equipped with an f 2.7 lens.

Neway Photo Hinges

A new idea in mounting photos in albums is offered by the Neway cloth photo hinges. By the use of these little mountings the capacity of the average photo album can be increased many times. The Neway hinges allow the prints to be in an overlapping cascade, like shingles, so that a series of a dozen or more prints can be placed on a page which ordinarily would hold but two. All the prints can be viewed conveniently by turning them like the pages of a book. The Neway Cloth Photo Hinges are made by the Harrison-Simpson Company, 11 Otis St., Boston, and may be purchased at your photo supply dealer.

Viscose Brush Sponge

The viscose sponge, which has been found to be so useful in the surface drying of still and motion picture films, has now been put up in a different form in which it is easier to handle, being essentially a viscose sponge attached to a handle so that it may be used to brush the surface of photographic materials for removal of water and dust. For those who prefer it, the older plain sponge is still available. The Viscose Sponge Brush is handled by Willoughbys, 110 W. 32nd St., New York City.

Our Book Shelves

Monsters And Madonnas, by William Mortensen. Published by Camera Craft Publishing Company of San Francisco, 9"x12", spiral bound, \$4.00.

This book has two major objectives. First to present Mr. Mortensen's unique pictures in a size and in a quality of reproduction that will permit their full beauty to be fully appreciated by all, and so that the pictures will be suitable for framing. Second to convey to the reader an accurate and detailed idea of exactly how Mr. Mortensen works, so that he will have a clear understanding, not only of technical matters but of artistic considerations, and problems as well. To this end twenty pictures are shown and carefully analyzed both from the artistic and technical point of view. In each case the text and pictures are on facing pages for the convenience of the reader. A further departure from conventional book practice is to be found in the fact that a device similar to the French fold is used for each page so that in no case is there any printing on the reverse side of the pictures. Thus single prints may be removed from the book without injury to the text or to any of the other pictures. The book carries an attractive cover with a photographic reproduction, and the new type spiral binding completely does away with the disturbing prominence of the old style. In an extensive opening chapter Mr. Mortensen discusses some of the pitfalls that lure photographers away from the field of truly creative photography. The clear, interesting and informative style of Mr. Mortensen's writing is too well known to readers of this magazine to need elucidation here. More than any other photographic writer he relates photographic problems to the age old problems of the graphic arts as a whole. Thus he places photographic problems in their proper perspective and establishes a broad

basis for an understanding that is extremely valuable to the student.

How to Use Your Candid Camera, by Ivan Dmitri, published by The Studio Publications, Inc., of New York. 8½"x11", Cloth bound, \$3.50.

Mr. Dmitri's book is the essence of simplicity. He has reduced his instruction, by careful planning, until the important material stands out like the bold lines of a charcoal drawing. It reminds the writer of that boon to those "cramming" days of college "finals," when some genius with the ability to summarize the salient facts from the maze of material in a course, would give a seminar. Then after a few hours of frantic listening the meaning and material of said course would suddenly stand out clearly from the confusion of lectures and reading.

Such a book is Dmitri's. Its subject is the use and care of the miniature camera and the material is so carefully and simply prepared that it is superb instruction.

Dmitri does not rely on the written words alone, but, like the expert instructor, goes to the blackboard and shows just how it is done. Naturally, there is no blackboard in the book, but the especially prepared illustrations show "how to do it" as clearly as the "chalk talk," or having the author himself manipulating the camera before one's eyes. Perhaps the biggest feature of the book is the fifty-six illustrations of the author's work, accompanied by complete technical details and a print showing the original negative. The instruction to be derived from a study of these photographs is invaluable to the photographer. Beautifully printed and bound in cloth with more than seventy illustrations, this book is a fitting example of the publishers, who presented "Making A Photograph" by Ansel Adams.

Classified Advertisements

Rate 6 cents a word; minimum \$1.50 each insertion, prepaid.

OUTFITS FOR SALE

◆DeBrie 35 mm. 400 foot camera—in new condition—complete with 3:5 Krauss Tessar and four magazines and DeBrie tripod for sale cheap. Write for photos. Frank Jacobs, 1213 Third Ave., Seattle, Wash.

◆Leica "C" F:2.5 like new, case, range finder, new Eldia printer, Correx tank, universal finder, sunshade, filter, \$85.00. New Elmar 35 mm. F:3.5, \$29.00. Photoscope meter, like new, \$18.00. J. Furuhashi, 755 N. King St., Honolulu, T. H.

◆Photo annuals and magazines including Camera Craft, Photo-Era, American Photography, Camera (European), and others dating from 1911 to 1935. Also Voightlander Avus Camera 3 1/4 x 4 1/4 (9x12 cm.) F:4.5 lens, as new condition. Kodac Amateur Printer. E. A. Murray, 2322 Portola Way, Sacramento, Calif.

STUDIOS FOR SALE

◆FOR SALE—Active commercial, portrait, pictorial, and finishing business in southwestern art colony and tourist mecca. Well located, low overhead. \$800.00 buys negatives, equipment, and materials. J. V., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

WANTED: Advanced amateur candid-cameraman in New York and Los Angeles to take photos in stores and of window displays, on free-lance basis for leading publication. G. P. J., care Camera Craft, 425 Bush St., San Francisco, California.

For Sale or Exchange: CONTAX, AMPRO, GRAFLEX, etc. What do you offer? What do you want?

WELLS SMITH RADIO CORP.

26 North Wells Street

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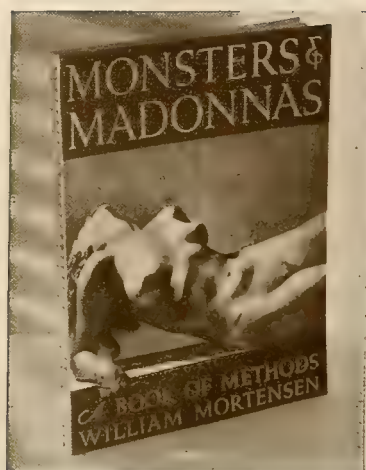
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Men At Work

Peter Stackpole



*"Peter Stackpole"
Helen Morgan*

ABOUT two years ago I found myself trying to decide what I desired of photography. Three years before that I knew it as a fascinating hobby, but gradually it changed into an expensive occupation which I must either stop entirely or follow as a profession. I had reached the point where I was constantly seeking new subject matter. My prints had a definite pictorial quality as far as the general run of camera club work went, but what had I to gain by photographing hills and trees, lily ponds, or occasionally an old ship's anchor except for the experience of using equipment and the pleasure of seeing a print neatly mounted, and of fairly good technic. I was dissatisfied because of the vague and limited future to all I had been doing. It didn't take me

long to find out how much better a painter could express what I was then seeking. Why couldn't I use this instrument to better purpose by making its advantages over any other medium my own form of expression?

In September 1934 I started photographing the bridges because I felt them to be the most spectacular projects in the country. No one had done anything with the bridges photographically that had in any way expressed the importance of man in relation to the tremendous and hazardous task he was performing. We who crossed on the ferries showed great interest. The structures we passed were always the subject of much uninformed conversation. I soon began to realize my one great opportunity was wrapped up and untouched in these growing structures. Too bad this had not occurred to me sooner.

I'll never forget that first day on a tower. With every step of the ladder I felt I would soon reach the top. After about twenty minutes of cautious climbing I had reached about two hundred feet—only two-fifths of the full height. This was plenty for the first day. The following



Peter Stackpole

trips up the bridge towers were much easier for me, mainly because I knew more of what to expect and had become better acquainted with the bridge workers and their utter indifference toward the perils of their work.

I know of no camera better suited for photographing this work than the Leica camera. Its great depth of focus, its compactness, its rapidity in operation and the low cost of film, of which there is a great variety, are only a few of the reasons for it being my choice. Very often I want to photograph a scene in which a subject but 5 feet from me and an object at infinity would have a pleasing significance if only I could include them both in good definition. With the Leica wide angle 35mm lens and a quick glance at the hyperfocal distance scale it is only a matter of about 6 seconds to adjust the camera properly for the snap. The 50mm Elmar and Summar lenses, however, have sufficient depth of focus, for the majority of my exposures.

I have mentioned before that the men are of greatest interest to me, although I am also conscious that height, textures of steel and water, patterns and forms of the structures, and the ever present ferry boats crossing the shadows of towers and catwalks are also important parts of this vital record of growth and change. Often my exposures must be



"Directing the Hammerhead"

Peter Stackpole



"Men In Scale Box"

Peter Stackpole

compromises between several conditions. I must stop a reasonable amount of action, as in the case of men working in the foreground. The lens must be stopped down to the smallest possible diaphragm stop for the proper depth of focus and still allow enough light to enter the camera to permit the proper exposure. The shot must be taken before any of my subjects have become conscious of me, and last but not least, I must not forget where I am standing or what my other hand is hanging on for. Whether or not anyone is working overhead and apt to drop things is also worth considering. It often has a lot to do with my choice of viewpoint.

A criticism of miniature camera users often suggested by users of large view cameras is that since they take so many exposures to a roll and mount but a very few of them, how can they help but make an outstanding photograph now and then? This statement seems to me to be the result of a competitive spirit which the user of the large camera must think exists between him and "those miniature nuts". Actually the miniature camera should serve an altogether different purpose than that of the large view camera. Truly enough a high degree of sharpness and gradation can be reached in miniature camera enlargements, but more important still is its ability to arrest the poignancy and significance of the minute. Unlike any member of Group F64, I started photography with



Peter Stackpole

the Memo camera before graduating to the Leica. I must have taken thousands of tiny postage stamp pictures with it before it was generally known that there was such a thing as real fine grain development. Then I started experimenting with every formula I could find including the formula of pulverized developer mixed with glycerin which you were to store in lead tubes over a long period of time before use. I'm sure I wasn't the only miniature camera user of that day to bury the stuff after it showed grain every bit as coarse as most other formulas would give. I have owned five Leicas. At present I have two Leicas, a 4x5 Sanderson view camera and a 4x5 Graflex.

For the past two years I have used Paraphenylenediamine developer for all my 35mm Leica film. I use Du Pont Superior for over 90% of my Leica shots and find it works best for my purpose with the Diamine developer. The formula is very similar to one recommended by Dr. Sease.

Water	16.7 ounces or 1000 c.c.
Sodium Sulphite	77.7 grains or 100 grams
Glycin	7.7 grains or 1 gram
Paraphenylenediamine	77.7 grains or 10 grams
Mix in distilled water at 150° F. Cool and filter. Use at 65° to 68° F.	

This developer has good keeping qualities and becomes finer grain



"Waiting for Steel"

Peter Stackpole

with use. It requires 40 minutes per roll of normally exposed supersensitive panchromatic film. I often find it advantageous to slightly over-expose and develop the film for 4 to 5 minutes in a solution of 1 gram of Metol to 10 grams of Sodium Sulphite to 1000 c.c. of water before using the Paraphenylenediamine developer. The time of development in the Paraphenylenediamine should then be cut to 20 or 30 minutes. The purpose of the two solution developer is to decrease contrast and improve shadow detail. An excellent way to keep the grain as fine as possible in negatives taken under poor lighting conditions which are apt to be weak is to reverse the latter suggestion by first using Paraphenylenediamine for its full time and then using the Metol solution for a time long enough to produce the desired negative density upon examination under a dark green safelight. I wouldn't suggest a very long look, however, as a rapid panchromatic film like Du Pont Superior is apt to fog easily if exposed to the safelight too long.

Under average lighting conditions I expose by Weston reading, rating Du Pont Superior at Weston 24 and develop in the Paraphenylenediamine developer only.

Dark Field Photomicrography

George H. Needham, F.R.M.S.

THE importance of dark field methods in microscopical work and the meagre practical information on applying and photographing specimens with this fascinating and striking branch of microscopy in the books on Photomicrography has lead the writer to record here pertinent information based on his own experience. The technical information given in the three previous articles on photomicrography (February and November, 1934, and October, 1935, numbers of CAMERA CRAFT) can in the main still be applied.

Methods of Securing Dark Field Illumination

There are two methods of securing dark field illumination. The first to be described is very simply secured with any microscope fitted with a substage condenser, while the second requires the purchase of a special dark field condenser to be used in the substage ring in place of the regular condenser. The methods follow.

(I) Place in the stop carrier below the substage condenser a black, central patch stop as shown in Figure 1 (left). This size of 18 mm. diameter has been found to be excellent in combination with the *bottom lens only* of the usual Abbe condenser when a 16 mm., ($2/3''$), x10, achromatic objective, N.A. 0.25, is used. The substage diaphragm *must* be wide open and the bottom lens of the Abbe condenser racked or moved up or down in its sleeve to secure the best result. If the adjustments and stop are correct your specimen will appear brilliantly self-luminous on a jet-black background. If your Abbe condenser is one of the old type which cannot be unscrewed, a much smaller patch stop will have to be used in the stop carrier, (9 mm. with the above mentioned 16 mm. objective), and the condenser racked up close to the under surface of the slide.

The limit of magnification with this simple dark field method is 300 diameters (an 8 mm., x 20, objective in combination with a x 15 eyepiece) and then a larger stop, (16 mm. diameter with a x 20 apochromatic objective N. A. 0.65) will have to be used, racking the substage condenser slightly up or down near the under surface of the slide until an evenly illuminated field is obtained. If there is a dark, central patch, the condenser is too low, while if the field is only poorly illuminated, then the condenser

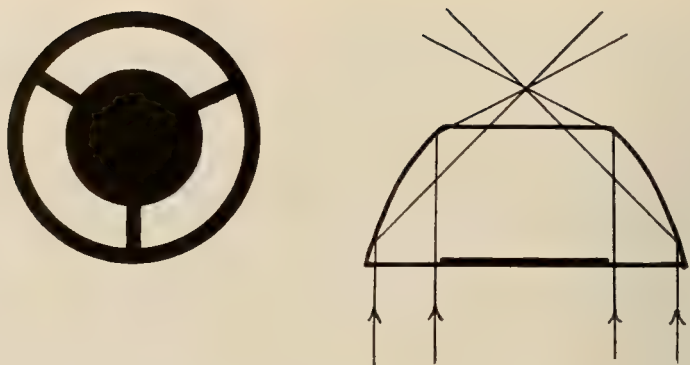


Fig. 1

(left). Black Central Stop for Low Power Dark Field with bottom lens only of Abbe Condenser.

(right). Sectional view of Paraboloid Type of Dark Field Condenser showing path of rays. No direct light enters the objective.

is too high. A little practice will soon enable one to get the proper focus very quickly. A thin layer of water, glycerine, or immersion cedar oil will aid in securing more brilliant images, the cedar oil being the best, remembering that the stop found best with the condenser used dry may have to be somewhat reduced.

For objectives other than those mentioned above, try various sizes of stops until the object or objects stand out a brilliant white against a black background. The microscope makers can only supply one or two sizes and these will only fit their make of microscope, so the user will have to make his own punched out of thin metal or cut out of cardboard and then blackened.

The author has had little success in applying patch stops to achromatic condensers either with low or medium powers.

A little better place to place these stops is between the top and bottom lenses of the substage condenser and the makers now supply a special dark field diaphragm to rest on the bottom lens and which can be satisfactorily used with the regular 4 mm., x 40, dry achromatic objective. A dark field illuminator element is also supplied to screw in place of the top lens of the Abbe condenser to give better dark field illumination.

(II) A special Reflecting Type of Dark Field Condenser called the *PARABOLOID* or *CARDIOID*, which is a necessity for all high power dark field work. The first named has one annular, curved, silver reflecting surface while the latter has two annular reflecting surfaces. The Cardioid type brings the oblique rays of light to a very accurate focus, more so than the Paraboloid, hence is the type to be preferred. All must be oiled to the under surface of the slide with immersion (cedar) oil and preferably used with an oil immersion lens. If this lens is above

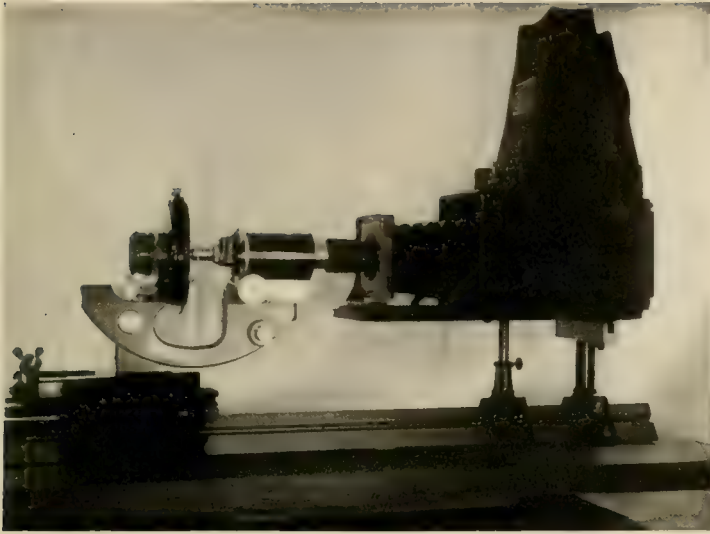


Fig. 2

Auto Graflex made light tight to Microscope for Instantaneous Photographs of Living Organisms.

0.85 N.A. with the Paraboloid or 1.00 N.A. with the Cardioid, a small iris diaphragm fitted just above the back lens of the objective has to be used in order to prevent any direct light from entering the objective and brightening the field. The funnel stop, formerly much used for this purpose, being dropped into the back of the objective to reduce the aperture of the lens to about 0.85 N.A., is not nearly as good or effective. The iris diaphragm is also much more flexible, the rule to follow is to reduce the diaphragm just enough to give a dark field with the objective being used, controlling the contrast between the object and background with the lamp condenser diaphragm.

By referring to Figure 1, right, it will be seen that the depth of crossing of the rays is quite small and hence the slide thickness recommended by the maker of the particular dark field condenser you may be using should be strictly adhered to in order to get your specimen where the rays cross. Different makers vary this distance from 1.2 to 1.6 mm. All preparations to be observed must be in a liquid or resinous medium and the stratum between the thin cover glass and slide should be as thin as possible. These condensers also have to be accurately centered to the optical axis of the microscope, hence are sold with centring screws affixed to the mount in case the microscope has no built-in centring screws. This procedure is done as follows:

1. Place a drop of immersion oil on the top surface of the dark field condenser and a drop on the underneath surface of the slide and bring the two in contact to form a thin layer.

2. Place lamp (a powerful light source such as 6 volt ribbon or coil Mazda or 115 volt Monoplane filament projection Mazda) about a foot away from microscope mirror, direct image of light source on to the

plane mirror and rack lamp condenser back and forth until the mirror surface is covered with fairly even light. A white card placed over the mirror will aid in doing this.

3. Use the x 10 objective and a low power eyepiece such as x 6, move the mirror until the beam of light can be seen from the side coming through the object slide and focus on the specimen layer.

4. While looking through the microscope, focus the dark field condenser up or down until the spot of light seen in the field is of the smallest size, remembering that if the condenser is too low there will be a black central patch surrounded by an annular bright ring of light while if too high the spot of light will be larger.

5. Move the spot of light to various parts of the field by moving the mirror slightly until it appears brightest and the most even over the entire surface, then bring into the center of the field with the centring screws. Repeat this test again to be sure the condenser is accurately centered, slightly readjusting with centring screws if necessary. Some of the dark field condensers have a small circle engraved at the center of the front lens as an aid in quick centering. If the condenser being used has this valuable feature, instead of the manipulation just described, focus down through the slide to this brightly illuminated circle and bring into the exact center of the field with the centring screws. After this point the mirror should not be touched.

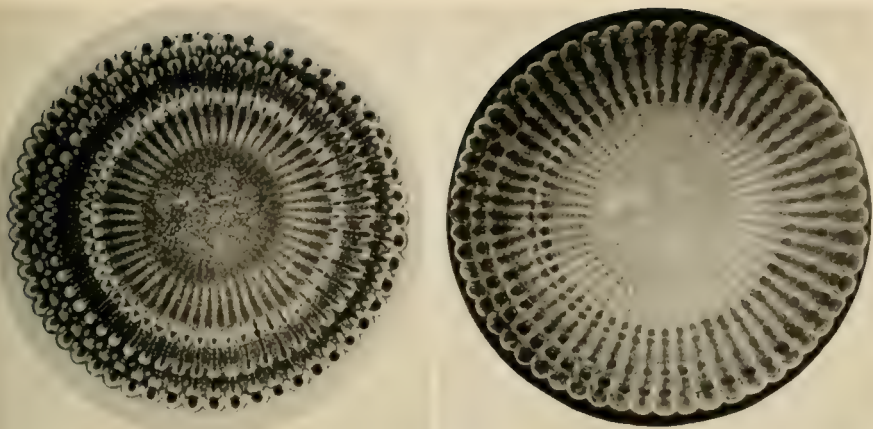
6. Change to the oil immersion objective fitted with iris diaphragm partially closed or a funnel stop, apply a drop of oil to the front lens and a drop to the upper surface of cover glass, make contact and focus carefully down until object comes into focus, moving slide while focussing so that in case one goes past the plane of the specimen, the tightening of the slide will give advance warning. In case the circle of light is not in the exact center of the field, bring it to the center with the centring screws, **NOT WITH THE MIRROR.**

7. Adjust iris diaphragm of objective to give a dark field, remembering that the more it is closed down the more the definition will suffer, and adjust for a velvet-black field by closing down the iris diaphragm fitted to the lamp.

8. Change to a higher power eyepiece.

Two special types of reflecting condensers have been used by the writer. These are the "CASSEGRAIN" Dark Ground Illuminator, made by Watson's of London, with which an objective of N.A. 1.4 can be used without stopping down, and the Zeiss LUMINOUS SPOT-RING CONDENSER with which an objective up to N.A. 1.3 can be used at full aperture. Neither give as intense a black field as the two types previously discussed, but the increased resolving power secured by their use make them both of great value. They are focussed and centered as already described, and used only with objects mounted in balsam or higher index media.

A change-over type is made for either dark or light field, but this is a compromise, as it will not give as good results as separate light and dark field condensers.



SECTION OF SEA URCHIN SPINE. X 55.

Light Field Illumination

Dark Field Illumination

Note that most of the structure showing dark with light field illumination is light with dark field and vice-versa, hence both methods are valuable in revealing structure. x 10 Reichert apochromatic objective, no eyepiece, Abbe substage condenser (a black patch stop 22 mm. diameter used in stop carrier for dark field) bottom lens only, 6 volt, 18 amp., ribbon filament lamp, Wratten "C" filter, exposure 15 seconds (dark field 18 seconds) on W. & W. Panchromatic plate. Contact prints on No. 1 Velox, glossy.

Preparing Specimens for Dark Field Illumination

There are innumerable microscopic objects which show up splendidly with low power dark field. A few of the most striking are living organisms in fresh and salt water, prepared slides of diatoms, radiolaria, foraminifera, sea urchin spine sections, sponge spicules and some crystals, the only requirement is that the object should be mounted in water or in any of the permanent media such as glycerine, glycerine jelly, cedar oil, Canada balsam and the other resinous media.

For high power work the most interesting and fascinating are living bacteria, fresh blood, living organisms in water, and prepared slides of these objects either stained or unstained mounted in cedar oil or Canada balsam, very dilute solutions of colloids such as milk, and finely divided metals such as gold, silver, copper, mercury and lead, in water, and diatoms mounted in resinous media.

A few points to remember in using the dark field condensers: The Cardioid, Spot-Ring, and "Cassegrain" are corrected for a 1 mm. to 1.2 mm. thick slide, anything thicker than this you will not be able to focus through. The Paraboloid and Change-over types, however, can be used with slides up to 1.5 mm. thick and are not nearly as sensitive to absolute focus and centering. Be sure the entire surface of the top lens is in immersion contact with the slide. For aqueous preparations it is much better to use a special dark field cell, which effectively prevents evaporation during prolonged microscopical observations and hence prevents convection currents from forming and carrying suspended particles across

the field of view. If the ordinary 3" x 1" slide is used be sure to use the very best quality slide free from pits and scratches, apply a *small* drop of the liquid to be examined to the center of the slide and allow a #1 (thin) cover glass to fall by its own weight on to the drop from an angle of about 30°, with one edge of the cover touching the surface of the slide. This will minimize the formation of air bubbles and give a very thin layer of solution. Avoid pressing on the cover to secure a thin layer.

The special cell or slide and cover can be absolutely freed from grease and minute particles by coating with a layer of plain Collodion U.S.P., allowing to dry for a minute or so and then stripping off.

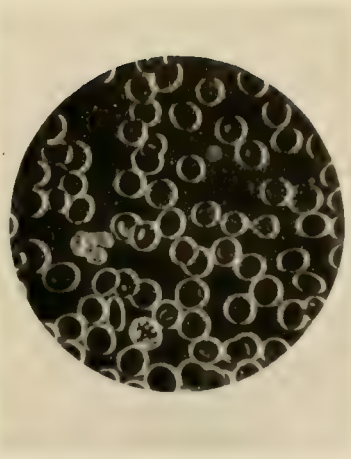
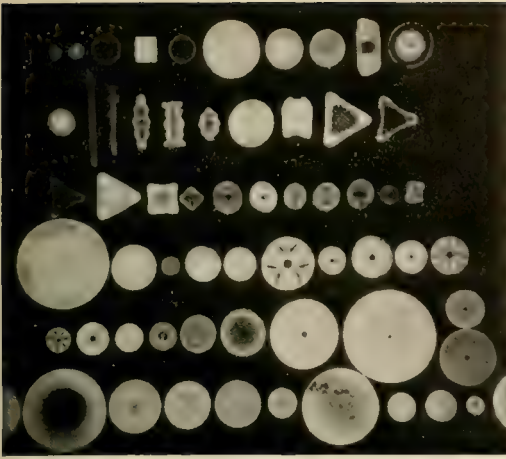
One last word of caution: If difficulty is experienced in focussing the specimen with the high power oil immersion lens it may be due to air bubbles in the thin layer of cedar oil between the front lens and the cover glass. To be sure, remove the eyepiece of the microscope and look down the tube, where if the trouble is due to air bubbles, the enlarged image of one or more will be seen through the objective. To remedy, wipe off oil from lens and cover with lens paper and re-apply oil to both surfaces. If too many air bubbles are present between the top lens of the dark field condenser and the slide, the dark background of the microscope field will be considerably lightened. To remedy, wipe off oil from both surfaces and re-apply.

Cameras Suitable for Dark Field Work

The several types of vertical and horizontal cameras described in the previous articles in CAMERA CRAFT all have their place in dark field photography. The advantages and disadvantages of each type are given below:

(1) *The Vertical type* with the long bellows extension camera mounted and sliding on *two* vertical rods above the microscope and the lamp, cooling cell, and filter holder mounted on a horizontal optical bench level with the mirror of the microscope is the best, particularly for photographing thick, temporary aqueous preparations, where the stage must be horizontal. The simple vertical camera described and illustrated in the author's paper in CAMERA CRAFT for November, 1934, is very good. Excellent results in the instantaneous photography of particles in colloidal solutions have been secured by using a micro-camera with side focussing eyepiece, taking plates $1\frac{3}{4}" \times 2\frac{3}{8}"$. With this arrangement instantaneous photographs of living organisms can be made with good hopes of success. The newer micro. attachments with side focussing eyepiece or side viewing screen, fitted with Compur shutter and made for use with the miniature camera are excellent also for this purpose. They concentrate the image to a very small area, making it possible to instantaneously photograph rapidly moving specimens which could not be photographed on the larger plate sizes. Subsequent enlargement four or more times gives very satisfactory results.

(2) *The Horizontal Optical Bench type* as described and illustrated in CAMERA CRAFT for November, 1934, has been used by the writer for a great deal of dark field photomicrography, particularly high power work with permanent preparations and for some work with thin, aqueous,



Type Slide of Fossil Marine Diatoms from Santa Monica, California. x 60.

(Left) x 10 Leitz achromatic objective, x 6 Huyghenian eyepiece, Abbe condenser, bottom lens only, 16 mm. diameter black stop, 6 volt, 18 ampere, coil filament lamp, "Daylight" blue ground glass in stop carrier, Wratten "B" and Watson 20% neutral filters, exposure 1½ minutes on W. & W. Panchromatic plate. Contact print on No. 1 Velox, glossy

Blood Smear Showing Lead Poisoning

(Right) x 800. Note deposition of lead phosphate in three of the red cells, (the so-called "Stripling", with a white cell on the left. x 60 Zeiss "X" oil immersion apochromatic objective, x 10 Compensating eyepiece, Zeiss "Cardioid" condenser, 6 volt, 18 amp. ribbon filament lamp, exposure 12 minutes on Hypersensitive Panchromatic plate. (Arc lamp would have been better). Contact print on No. 5 Azo, glossy.

temporary mounts. No particular trouble was experienced with the specimen in liquid mounts falling due to the slide being vertical on the stage, or cedar oil breaking contact and running down the slide.

(3) A Graflex or other type of reflex camera can be very easily connected to the microscope in its horizontal position, using two clamps on the optical bench to support it at the correct height for the microscope, as shown in Figure 2. Instantaneous photographs of living objects in pond water have been taken with this set-up, as shown in Figure 3, using a dark field stop below the condenser as previously described and a powerful source of light. The living rotifer (Figure 3) was taken with even a more simple set-up—an old studio 5" x 7" camera made light-tight to the microscope and brought to the right height with a block of wood. A 50 watt frosted Mazda was the illuminant, hence requiring the long exposure of 8 seconds. A much more powerful light source would have been better, but then, with such delicate specimens as rotifers, there is danger of killing your specimen with the heat or other rays from the lamp before the photograph can be taken, even if a cooling cell or cells are used.

Microscope

All that has been said in previous papers regarding a suitable microscope for photomicrography, such as rigidity, smooth working of the mechanical adjustments with no back-lash or play, holds good for dark

field work. The substage arrangements for centering and focussing should be as precise as possible if high power work with the special dark field condensers is to be done. At least the substage should be fitted with a rack and pinion.

Optics

Due to the fact that we are usually using the *Objective* at full aperture in dark field work and not stopping down with the substage iris diaphragm, as in light field work, the best lenses such as the apochromats or fluorite type are decidedly better, particularly for high powers. They give a whiter and brighter image than the achromats. In the author's experience, the lenses found best for dark field photomicrography are as follows:

x 8 and x 10 achromat,	N.A. 0.21 to 0.30	{ Used with Abbe substage condenser and black, patch stop below condenser.
x 10 apochromat,	N.A. 0.30	
x 20 apochromat	N.A. 0.65	

x 60 apochromat, N.A. 0.85 to 1.00	{ For Cardioid or Parabo- loid Dark Field Reflecting Condensers.
(The latest type has an iris diaphragm fitted between the lenses to reduce the aperture, if necessary). These lenses are oil immersion ones and specially computed for dark field.	

x 90 Fluorite Oil Immersion, N.A. 1.3	{ For "Cassegrain" and Lu- minous Spot-Ring Con- densers.
x 90 Apochromat Oil Immersion, N.A. 1.3	

Due to the wonderful contrast secured with dark field methods a higher power eyepiece can be used than with light field work. The eyepieces found most useful are as follows:

x 6 Huyghenian	{ For low power achromatic objectives.
x 7 and x 14 Watson Holoscopic	
x 7, x 10 and x 15 Compensating	{ For apochromats of all powers and high power achromat and fluorite lenses.

Lamps

As in other branches of photomicrography, even illumination over the entire plate is very essential with dark field. The following sources of illumination have been used and tested and are listed in order of preference:

(1) 18 ampere, 6 volt, ribbon or coil filament lamp for A.C. is the best lamp for all powers. It gives even and constant intensity illumination. For low powers, when the Abbe substage condenser with central black stop is used, it will be found necessary to use a disc of ground glass in the stop carrier below the condenser in order to get perfectly even light over the entire field to be photographed. For higher powers with the special condensers no ground glass should ever be used.

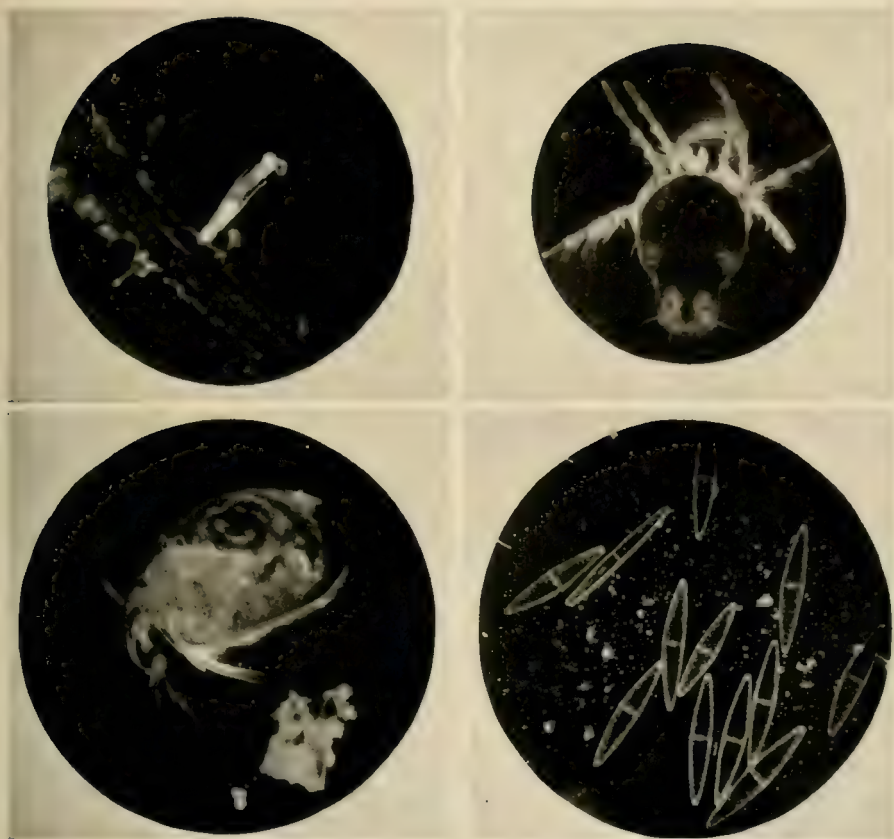


Fig. 3. Living Organisms in Pond Water

(Upper Left) ROTIFER (*Oecistes*). $\times 60$. (Note two eggs at base of rotifer). Watson 1" ($\times 6$) achromatic objective, $\times 10$ eyepiece, Abbe condenser with patch stop, condenser in water contact with slide, 50 watt frosted Mazda with blue "Daylight" glass, exposure 8 seconds on W. & W. Panchromatic plate. Contact print on No. 3 Velox, glossy.

(Upper Right) BLUE WATER MITE. $\times 40$. (Note resemblance of "eyes" and "mouth" on body). 50 mm. Zeiss Microplanar, $\times 15$ eyepiece, Abbe condenser, bottom lens only, with black stop, Graflex camera, 8 ampere A. C. arc lamp, exposure 1/20 second on Eastman Commercial Panchromatic film. Contact print on No. 3 Velox, glossy.

(Lower Left) CYPRIS. $\times 110$. $\times 10$ Leitz achromatic objective, $\times 10$ eyepiece, Abbe condenser, bottom lens only, with patch stop, Graflex camera, 8 ampere A.C. arc lamp, exposure 1/10 second on Eastman film pack. Contact print on No. 4 Azo, glossy.

(Lower Right) DESMIDS. $\times 75$. Same as Cypris except $\times 7$ Holoscopic eyepiece and exposure 1/20 second. Contact print on No. 3 Velox.

(2) 4 to 5 ampere D.C. or 8 to 10 ampere A.C. arc lamp is absolutely necessary for instantaneous photographs of living organisms with low power dark field. For photographing colloidal particles having rapid Brownian movement the author and his associate, R. A. Wetzel of the College of the City of New York, found it necessary to use a special 35 ampere D.C. arc fitted with copper coated carbons. For almost all other work the above mentioned 6 volt, 18 ampere lamp is very satisfactory.

(3) 6 volt, 5 ampere, coil filament lamp for A.C. For low and medium powers. This lamp is not intense enough for high power photography. For low powers, use ground glass as directed under the 18 ampere lamp.

(4) 100 watt, 115 volt, Monoplane filament Mazda lamp. Unfortunately ground glass has to be used with this lamp in order to get even illumination, due to the wide spread and fine filament. Hence the intensity is greatly reduced so that it cannot be used for high power work.

(5) The 15 watt substage lamp has been used by the author's students with fairly good success for low powers. An exposure of two minutes was necessary with a Wratten & Wainwright Panchromatic plate with no filter.

All the above lamps except the last mentioned are fitted with an iris diaphragm to increase contrast when necessary and also at the same time to reduce glare. The writer has never used the Photoflood bulb for low power dark field photography, but sees no reason why it should not be satisfactory.

Filters

A Watson glass 20% (80% of light absorbed) neutral filter has been found valuable with low powers to reduce glare around the specimen. The Wratten X-1, light green, "B", green, "C", blue-violet, and "H", blue, have also been used for the same purpose, particularly with low and medium powers. Also these filters help to give a sharper image on the plate. A clear, Corning "Daylight" blue glass has also helped to reduce glare. Hence a similar blue glass with ground surface is better than the ordinary ground glass for evening the light with low powers.

Plates

The following plates have been used with excellent results:

(1) *Wratten & Wainwright Panchromatic*. The best for the majority of work with dark field, as they are of medium contrast.

(2) *Wratten Panchromatic "M"*. This plate is slower and more contrasty than the previous plate, hence more limited in its use for dark field. It has been used, however, with excellent results in instances where the object was less contrasty than usual.

(3) *Wratten Hypersensitive Panchromatic*. Essential for instantaneous dark field photomicrography of moving objects and for specimens not strongly luminous under high power dark field. Only use these plates when you must as they never seem to develop as clear as the slower plates.

(4) *Eastman Commercial Panchromatic Film* has been found to be good for dark field photography.

Exposure

Some difficulty will be experienced in judging the length of exposure by the usual procedure of observing the image on the ground glass, as the specimen is only illuminated by oblique reflected light striking from all sides evenly, hence one is very apt to under-expose. A study of the exposure times given with the photomicrographs illustrating this article will serve as a guide for your first trial exposures and then accurate recording of complete data in an Exposure Notebook will serve for future reference.

Developer

For the past several years all dark field negatives have been developed with the two solution developer given by the author in *CAMERA CRAFT* for February, 1934, to which the reader is referred. Perhaps a less contrasty developer would be better in some cases, such as the normal contrast developer given with the Wratten plates, using the development time given in the box of plates you are using.

Fixing

After washing the developed plate for a minute in a large volume of water, the author fixes in a *freshly prepared* plain hypo bath to which a few crystals of potassium meta-bisulphite have been dissolved and then washes the plate for half an hour in a vertical rack. Before drying, the excess water is first carefully absorbed from the emulsion side by gently wiping with moistened absorbent cotton and then wiping the back surface of the plate.

Printing

Glossy Velox or Azo No. 1 and No. 2 have been used most for dark field negatives. Occasionally the more contrasty grades have been used for an under-exposed, instantaneous or high power negative. Squeegee and dry on a chromium or ferrotype plate to bring out all the detail possible.

Mr. Needham is willing to answer any questions or to assist in solving the problems of those seriously interested in photomicrography. Communications should be addressed to this magazine.—Ed.

Pictorialism

For Beginners

Harold G. Grainger, A.R.P.S.

Part IV. How the Height of the Camera Influences Successful Pictorial Rendering

IN A previous article the importance, in pictorial photography, of approximately correct exposure was stressed and, by comparative illustrations it was demonstrated that the material composing the subject, its relative darkness or lightness of tone; its colour, as also its distance from the camera influenced its appraisalment by the camera user. It was not possible, of course, to indicate definitely what exposure was necessary at some stated time in the day for a particular subject, for conditions vary too much, not only in different parts of the same country, but even locally. The atmosphere, for example, is clearer and colour purer in some districts than others, a fact particularly evident in lake and mountainous districts. On the other hand, proximity to towns, especially those highly industrialized often makes some difference, even beyond the suburbs. There is no doubt that, as commonly observed, light is, on the whole, most intense,—that is, its actinic value highest—at the seaside; for there not only is the relative purity of the atmosphere at its maximum, but in addition the sea reflects a great deal of light useful for photographic purposes.

Long experience convinces the writer that (apart of course, from what is generally referred to as the center of interest) no portion of a landscape picture exceeds the foreground in importance. On it, one might say, the structure, the make-up, of the subject is built. Its form, its lights, its masses of tone, its very position in the picture space make its claim to attention undeniable. Not infrequently success in picture making is dependent upon the use made of this part of the composition; the manner of linking with it the rest of the subject when endeavouring to produce a harmonious rendering of some scene with the hope, subsequently, of exhibition at some Salon or other good show. That this necessitates care in the selection of the view-point is generally recognized; but is it sufficiently appreciated that the height of the camera from the ground is also of considerable consequence if the co-ordination of the several parts of a subject is to be satisfactory?

"Corner of a Cottage Garden"

Note: The elevated camera position gives scope for a clear presentation of the foreground.



Casual snapshooters, to their disadvantage at times, make little or no change in this respect. Apparently when folding hand-or-stand cameras are in use, one or other of two heights, waist-level or eye-level, according to whether the tiny brilliant finder or the simple, yet eminently practical eye-level of the wire-frame or direct-vision finder is favoured. Similarly the majority of amateur reflex camera users would appear to be just as careless of the value of greater elasticity in this important matter for seldom do they seem to think of modifying the one height, usually waist-level, convenient for operating these instruments.

Even early in his career the earnest pictorialist realizes that considerable relaxation from these rather thoughtless methods are essential if progress is to be made and consequently develops more versatility as a matter of course. It may be that, wisely, a tripod is employed and the subject viewed the full size of the plate or film (if a film-pack is in use) on the focussing screen. It certainly gives unequalled opportunity for studying the composition, and, until experience renders its continued use no longer necessary, is recommended.

The accompanying "Corner of a Cottage Garden", comprising a village church and cottages beyond the confines of an old-world garden is a fair example of the type that necessitates a high camera position if the best use is to be made of the whole of the subject matter. Take the foreground for instance,—pyramidal groups of delphiniums and other old-fashioned flowers, partly sun-splashed and partly in varying degrees of shadow. Only by careful preliminary selection, with the camera on a



Print A

Camera at average height from ground — waist level — fails to give satisfactory rendering.



Print B

Camera at eye level assured a good presentation of foreground material and path leading to distant church.

tripod for preference, could these be so arranged on the focussing screen that they not only of themselves compose pleasingly as masses of light and dark tones, but that the church and village street could be so placed in relation to them that the whole subject would be well balanced and made to appear a harmonious whole.

It is perhaps worthy of note that various masses of tone, even though only small in area, effectively link up the foreground with the subject matter beyond, by providing connecting "lines". It will be obvious that the employment of a lower camera position must inevitably have deprived the subject of this vital link connecting the foreground with the rest of the subject.

Attention may also be directed to the two prints—"Morning Sunshine",—vistas of a village church from the same camera position (but different heights from the ground) close to the entrance gate outside the boundary wall, examination of which will prove beyond doubt that unusually high camera positions are sometimes imperative where worthwhile renderings are the aim. Print A taken with the camera at about chest level is particularly disappointing because of the conjunction of the near wall and distant church—the latter appears to be incongruously perched on the top of the former. In addition to the awkward "hunching-up" as it were, of two important components, the absence of the connecting path which, as will be seen, is so valuable a feature of the com-



Print C

Elevated camera position permits the eye to follow the winding river toward the distant village.

panion print B is a decided detriment. No exhibition committee would accept for hanging purposes such an effort at picture making.

Now look at print B obtained with the camera at eye-level. Not only has the elevated view-point provided the separation so vitally necessary between the near wall and distant church, but, of great importance, the path linking the two can be followed from the entrance gates direct to the church door; an excellent example (seen also in "The Silent Mill", mentioned later) of an important feature in picture construction, a "line" or "lines" leading pleasantly into the picture space. Before we leave these prints I must draw attention to the mounting stone buttressing the wall. Without this relic of days when horseback riding was fashionable, this subject would hardly have been worth taking; at any rate its presence adds very considerably to the pictorial value. Pyramidal in form, its heavy end-shadow helps to give stability, a desirable feature which receives additional support from the ornamental lamp-post rising above it.

A high view-point was similarly just as necessary for the pastoral landscape, "Tranquility", which depends for its success, pictorially, on an unobstructed view of the river winding its sinuous way between the



Diagram to show the weak unconvincing composition with no foreground interest or deep tone to give stability to the composition. Compare with photograph on page 235.



Diagram to show improvement brought about by including foreground material. Compare with photograph on page 235.

rushes on both banks towards the distant village dominated by the church. I ask readers to picture for themselves what this subject would have looked like had the near rushes screened from view the river just beyond through the use of a lower camera position. One very disappointing result would have been the loss of the present charming effect where the dark tones of the tops of these foreground rushes are seen against the reflection of the light tones of the sky in the river. This picture is a further illustration of the value of some feature or incident which, usually commencing in the foreground, leads the observer, by its formation or display of light and shade, into the picture space. Whilst this is often accomplished by a bold, undeviating curved sweep, it more frequently takes the form of the letter "S" or "S" reversed, as in the landscape under review. This sinuous line is generally referred to as "Hogarth's line of beauty" from the great use made of it in all his works by the great English artist of this name.

To demonstrate, by illustration, the value of a camera position quite close to the ground let us consider the landscape picture "The Silent Mill". When this subject was first seen there appeared to be nothing whatever in the meadow of sufficient importance to provide necessary balance, either in interest or mass of tone, to support the composition in anything like an adequate manner. Only an expanse of grass seemingly existed and if the reader will endeavour to visualize the scene as then presented, it will be appreciated that everything of moment was unduly concentrated in the middle distance. Here, in fact, was not only the chief feature (the old mill) but, in addition, all the deepest tones. Fortunately, however, as a result of persistent search for something more suitable, nettles and other undergrowth of the commonest kind were found and advantageously employed to the fullest extent by dropping



"The Silent Mill"

Harold G. Grainger, A.R.P.S

A very low camera position assured good use of very simple foreground material, which is indeed the making of the subject.

the camera to within a foot of the ground and taking the picture from this lowly position.

In addition to being dark, thereby helping the subject immensely by the dual provision of a better foreground and distribution of tones, the formation or growth of the coarse herbage usefully leads the eye from the lower edge of the print into the picture space (as with the river in the landscape subject "Tranquility" this can be likened to Hogarth's "line of beauty")—a plan or method so long employed by artists as to have become almost a principle. It is indeed no over-statement that without this Nature-provided material, or alternatively something else, to furnish balance, foreground interest and stability, the subject would hardly have been worthy of consideration as a possible picture. The small pen and ink sketches will, I think, especially in the distribution of masses of tone, prove at once the superiority, in this instance, of a low camera position over one of normal height.

On another occasion (these are by no means isolated examples) whilst photographing a lych gate in an old village, a desired peep of the church tower beyond was obtained at the same time by making use of

the step of a motor car to support the camera. It is perhaps hardly necessary to go further into the question of high and low camera positions for it will be seen that just as there is usually, in accordance with individual tastes and aims, one best view-point for a subject so there is likely to be one camera height which will best satisfy each worker earnestly striving for pictorial effects.

For the majority of subjects it is naturally only to be expected that a normal or average height will fully meet all requirements and therefore nothing more is needed. When occasions do arise, however, as they inevitably will, for some procedure out of the ordinary to ensure a better result,—to emphasize, for example, some foreground interest, by the adoption of an unusually low camera position; or, on the other hand, by the choice of a view-point exceptionally high, to attain some other desired effect necessary for pictorial aim,—the important thing is to be alert to possibilities for the exploitation, to the best advantage, of important features of a composition in whatever part of the picture space these may appear. The first named, as has been shown, is a capital method of securing for the base of a composition an accession of strength of tone which in itself is an assurance of that essential in a pictorial effort—stability. Just as effective, in suitable instances, is the high view-point where, to avoid confusion in presentation of a subject, separation of objects in different planes may be desirable.

As in many other things in life, be it commerce, book-learning or study in any of the professions or arts progress is always made by those whose ideas and methods are not hide-bound or too fixed in one particular direction. Ready adaptability to varying circumstances is a very valuable asset in picture-making with the camera; for its possession is some assurance that full use is likely to be made of opportunities offered. Apart from the extra enjoyment obtained by trying-out different view-points and camera heights, (this sort of thing is never too much trouble to keen workers) when a subject has been found, the mind unencumbered with set ideas will be ready to make tests which must eventuate in a bigger average of successful results.

If therefore what has been written causes any reader to consider that there is something to heed in the advice given then the writer will consider himself repaid. At any rate it is some preliminary to the consideration, in future articles, of other things necessary in picture making.

Practical Miniature Camera Photography

H. Crowell Pepper

Part II. Equipment

THERE is an idea prevalent among photographers that to be successful with the miniature camera one must possess a great number of special pieces of equipment. This is not true. A frank analysis will disclose that no more special equipment is required than is needed for larger cameras. The universal character of two little precision cameras and the special equipment supplied to make them truly universal has undoubtedly had much to do with the birth of this idea. When you realize that several large cameras would be required to do the same work which the Contax and the Leica will do and that each of the larger cameras would require special equipment, it becomes quite evident that less gadgets (?) are necessary for the little cameras. Unfortunately much has been written in the photographic press of gadgets which the inventor (?) believes helpful, if not necessary, in the practice of miniature camera photography. Certain manufacturers, desiring to "cash in" upon the popularity of the little camera, are adding to the confusion by offering special equipment. The situation is no different from that which has existed throughout the history of photography. I have catalogs containing hundreds of pages of items, ranging from A to Z all of which are offered as aids to the photographer. Probably one per cent would cover the necessary articles.

The confusion may be quickly overcome if we but realize that photography is still photography, irrespective of size of camera, and that the necessary equipment is dependent upon the character of the work we propose doing. After all the camera and accessories are merely means to an end or at least should be—merely tools of the art. The average photographer confines his work to genre, portraiture, landscape, seascape, architecture and sports. Any camera mentioned in my previous article will cover these and an expensive camera or outfit is not prerequisite to

success. With possibly a few exceptions only one lens is required and this need not be faster than f:3.5 or f:4.5, such lenses with good shutters are furnished upon the cheaper cameras. Add a few filters, properly selected, a lens shade, a tripod, a stout carrying case and a tank and the necessary equipment is complete. We must bear in mind the limitations of such equipment and work within these, otherwise we shall be disappointed. I believe a safe rule to follow is: The cheaper our outfit the larger the negative size should be. As we progress in this series of articles the reasons underlying this rule will become more apparent.

The real problem of selecting special equipment arises when we turn our efforts to specialized lines of photographic work, e.g. serious portraiture, night shots of sports, nature photography, micro-photography, theatre and candid shots, advertising and commercial photography. In the first we should own lenses of different speeds and focal lengths. I do not advocate extreme focal lengths in portraiture, but there are times, if one uses a negative size of 24mm x 36mm, when the normal 50mm lens may well be supplanted by one of 85mm or 90mm. Night shots require lenses of extreme speeds and I find 50mm, 85mm and 90mm focal lengths the most useful. In nature and micro-photography we need telephoto lenses and special equipment such as supplementary tubes, distars and proxars and apparatus specially designed for this work such as the Zeiss Contameter. In advertising and commercial photography we require every piece of special equipment that will aid us in securing results. Here results alone count and excuses are not accepted. If we attempt scientific photography our special equipment is limited only by our ingenuity.

So much for generalities. We shall consider some of the special articles of real value.

Tripods. What a tripod for a camera small enough to fit in our top-coat pocket? Yes, and a good stout one at that. Few realize the difficulty of holding steady a small camera. It has been estimated that not more than one in every four photographers can hold the little camera steady enough to make exposures of one-twenty-fifth second and many experienced workers advise a tripod for all exposures under 1/100th sec. The movement is slight and if contact prints are to be made probably would not be noticeable. Unfortunately we must make large prints from our tiny negatives and this slight movement becomes quite apparent when enlargements of six or more diameters are required. I have had many prints submitted with the complaint that the lens is faulty when in truth the fault lay in the photographer. If you are required to make great enlargements from small negatives the cardinal rule to follow may be stated: Use a steady tripod, fine grain film and process with a fine grain developer. The cheaper metal tripods are worthless. Test the one you contemplate buying for rigidity bearing in mind that you cannot secure this in a light weight tripod. A tilting and panning head of solid construction will prove invaluable.

Range Finders. The more expensive precision miniature cameras are supplied with range finders coupled with the lens. If your camera



Peter Stackpole

is not supplied with one by all means purchase a separate finder and use it. The photographic magazines have contained many articles during the past few years that have been misleading. You were advised that one of the great advantages of the miniature camera lay in the short focus lens. That with such a lens you did not need to worry about the focus—the depth of focus was so great that any failure to properly judge distances would be fully compensated. I tell you that proper focus is just as imperative with the little camera and short focus lens as with the larger camera, in fact more so. What is overlooked is that the principal object should be the sharpest in the picture and that irrespective of the quality of the lens there is only one plane of sharpest focus. Before and behind this plane there is a rapid falling off due to the increase in the circles of confusion. While this is less in the short focus lenses and in many cases would not be noticed if contact prints are made, our aim is a large finished print and with each increase in enlargement diameter failure to properly focus the principal object becomes more noticeable. Again but few persons are able to judge distance with any degree of accuracy. It is silly to spend 50 or more dollars for a fine precision miniature camera and then throw away its advantages by trying to guess distances. Buy a good range finder if your camera does not come equipped with one.

Lens shade. This little inexpensive device is so simple many fail to realize its importance. If you desire bright snappy negatives use a lens shade. We do not require any light except that reflected from the



Correx Tank

object photographed to form our negative image. Our modern large aperture lenses gather much more light than is needed. This light is reflected from surface to surface and finally reaches the emulsion to cause fog. It is not image producing light. A few nights past I was photographing a wrestling match, using my Zeiss $f:1.5$ Sonnar at full opening. My lens was fully protected from the ring-lights by a lens shade. Beside me sat a Press photographer using an $f:2$ lens without a shade. He was complaining about the quality of his negatives and when I asked if he did not use a lens shade he simply stared at me with a blank expression and said "Will it help much?" The lights are overhead and often it was necessary to point towards these powerful lights. I told him I never used any lens without the protection of a shade. In buying a lens shade be sure that it does not "cut off" the edges. The angle should correspond with the angle of the lens used. It is well to buy from the lens maker.

Tanks. Most of the modern miniature cameras use roll film. For the processing of this a tank is required. I say this advisedly after trying every method of development. There are a number of good tanks on the market at reasonable prices. The Correx, Reelo, Perkino and Nikor are representative. My preference is the type using the apron but many object on the ground that the apron must be cleaned between each development and claim that the nipples of the apron prevent development and fixing. I do not have this latter trouble probably because I use an agitator when developing. My agitator consists of a motor equipped with



Reelo Tank

a speed reduction box cutting the r.p.m. to eight permitting a slow turning. Since the film is wound on the reel clockwise and the motor revolves the reel counter-clockwise the developer is forced between the film and apron. An agitator is a valuable piece of equipment shortening the developing time about 20% and giving even development. In purchasing a tank determine whether the reel turns freely and there is provision for turning it. If the non-apron type is bought see that the reel is supplied with plenty of perforations permitting a free flow of the developer.

Filters. Photographers as a rule recognize the value of filters, but unfortunately seem to know little about the principles of their selection and use. This is unfortunate since many filters are purchased and then discarded as worthless when they fail to produce the desired results. We cannot enter upon a scientific discourse of filters and their properties in this article but we may lay down certain fundamentals which should prove helpful. To do so we must mention two facts often overlooked by photographers, viz: (a) white light is composed of all colors and (b) our emulsions are extremely sensitive to blue light. Objects in nature are spoken of as blue, red, green, etc., meaning their color sensation to the eye. This dominant color results from the absorption of almost all other colors and the reflection of a particular color. Of course a portion of the other colors are reflected, especially the blue, but it is relatively small. You will notice this if the object possesses a glazed surface. Our emulsions, even the best panchromatic ones, are not proportionally sensitive to colors and this variation will be found in similar types of emulsions by different manufacturers. All possess an extreme blue sensitiveness which must be controlled to a greater or lesser degree, depend-

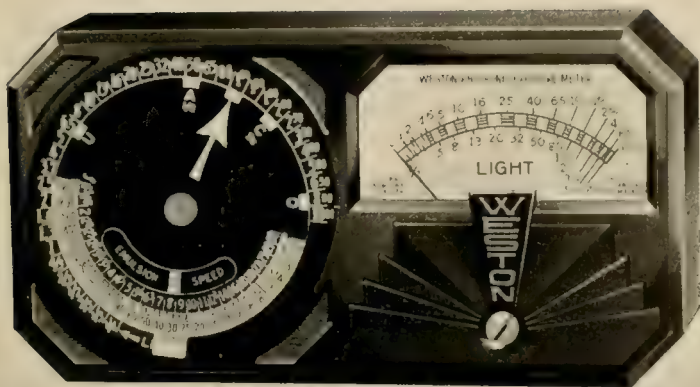


The Photoscop

ing upon the results sought. Since no emulsion is perfect we are supplied with orthochromatic and panchromatic emulsions. Herein lies another proof that photography is a series of compromises throughout. The "ortho" emulsion is sensitive to blue, blue green and yellow green but not to red. The panchromatic emulsions of which there are three types are sensitive to all colors to a greater or lesser degree, except a certain band in the green. This is set forth merely to point out that definite filters cannot be expected to give good results with both "ortho" and "pan" emulsions.

Filters for our purpose may be divided into three classes, (1) Compensating, (2) Contrast and (3) Selective. Compensating filters are those which slightly depress certain colors without totally absorbing them, e.g. the light yellow or yellow-green filters used to reduce the action of blue light. Contrast filters completely absorb certain colors and are used to emphasize certain colors in the object photographed. Selective filters are those used in three color photography to produce the three color-sensation negatives.

Before we are really qualified to select a filter we must know the characteristics of our emulsion, the cut-off characteristics of the different filters and the result we seek. The former is now being furnished by emulsion makers, the second by the makers of filters and the third by yourself. The study of objects by means of the Eastman Filter Chart will give much valuable information in the rendering of color into monochrome. Combine this with a study of a book of filter cut-off charts and emulsion characteristics and you will know all you need concerning the selection and use of filters to produce definite results.



The Weston Meter

Exposure Meters. I own what is fast approaching a Museum collection of exposure meters, ranging from tables, slide-rules, paper-tinting meters, extinction meters and photo-electric meters and a photometer. I have used all and found all satisfactory. Now let me make a confession. Like many amateurs and professionals who have practiced photography for many years I am often guilty of failing to practice what I preach. I have made thousands of negatives without reference to an exposure meter. I have for many years been familiar with the importance of the tone range of the subject and the importance of this in the determination of proper exposure. Like thousands of others I did nothing about it for frankly I did not know how to measure this tone range with any degree of accuracy. I depended upon the latitude of the film or plate used. When the photo-electric cell meter was introduced quite a change took place. It became possible with a fair degree of accuracy to measure this tone range. It became possible to understand the value of the H. & D. straight line of the emulsion curve. We soon learned that with emulsions capable of registering a range of tones from 1 to 128 it was possible to place our subject tone range at different points upon the H. & D. Curve. That with a low tone range subject there were several possible exposures all equally correct, the only difference being in the amount of silver deposited. We learned something more. How to handle the exceptional subject where the subject tone range exceeded the tone range of our emulsion. How to compromise to secure the best possible results. Where absolute accuracy in exposure was necessary because of the close relationship between the subject tone range and the emulsion range we were able to determine the correct exposure. With such a tool at our command it is the height of folly not to own and use one. They are not perfect—nothing we use in photography is—but for all practical purposes they are sufficiently accurate. The electric expo-

sure meter is the greatest gift to the practical photographer and even the professional has been converted. Do not fail to own one. I do not deny the efficiency (practical) of the extinction type but unfortunately many persons cannot use them because of eye conditions. The mere possession of such a meter will not necessarily spell success. You must study the book of instructions carefully and experiment with the meter until you learn how to use it. It will prove invaluable in the preparation of a series of standard negatives for comparative purposes and in the study of printing papers.

Part II will be concluded in the August issue.—Ed.

Cinema Section

Edited by

William A. Palmer

Shooting Industrials On 16 mm.

THERE is no question that 16mm film and 16mm portable projection equipment is the most logical means to use in presenting an industrial or advertising film. It is possible to project excellent 16mm pictures as large as twelve feet wide with equipment that has absolutely no fire hazard, needs no enclosing projection booth, and is far easier to operate than the standard size 35mm portable projection equipment. Sound quality on 16mm film is now thoroughly satisfactory for all practical purposes. In short there is no reason for using other than 16mm projection equipment for all showings outside of extra large halls and theaters. For uses where pictures larger than ten feet wide are consistently needed, 35mm equipment is necessary.

The question arises, when it is known that an advertising film will not have to be run on any but 16mm equipment, as to whether the pictures should be photographed directly on 16mm film or on 35mm film and then reduced to 16mm? I propose to analyze the advantages and disadvantages of the two methods and try to arrive at conclusion as to the best method of production which will give good quality at lowest cost.

In order to make the comparison, I shall be concerned at first with the picture end exclusively. Sound-on-films can be added to the picture no matter whether it is photographed on standard film or 16mm and the methods of doing this will be discussed later.

There are several methods by which the picture can be made. They are:

1. The picture is photographed on 35mm negative film. A print, preferably in 35mm film, is made from all the negative and this is used as a work print on which the editing and re-arranging is done. The negative is then carefully matched with the work print, and finally 16mm reduction prints are made for projection of the finished picture. The minimum cost per reel for film alone when this method is used is about \$110 per 1000 ft. for the negative and work print and \$50 dollars per reel (1000 ft.) for the final prints in small quantities. (Prices will differ somewhat depending upon the volume of work and the location of the laboratory). It is necessary in all methods that much more negative be shot than is used in the finished film, ordinarily about double the footage of the completed job.

2. The second method is the use of 35mm negative for the photography, a 35mm print from that negative for a work print, a "lavender" or special master positive in 35mm, from which a 16mm duplicate negative is made, and finally a 16mm contact print from the 16mm negative. This method is used when a large number of projection prints are required. The cost per reel for the final prints are \$15 to \$20 per reel (400 ft. 16mm., equivalent to 1000 ft. 35mm) instead of \$50 dollars. Also it saves danger of damage to the original negative in repeated trips through a printer. This method makes the first part or preliminary work very expensive, almost double method (1) above, and the quality of the finished prints are often rather poor.

3. This method uses a 16mm camera and 16mm *negative* film. The film is given fine grain development and a positive work print made of all the negative. The negative is matched with the completed work print as in method (1) and the final prints made by contact from the matched negative. The cost for the negative and work print is about \$40 per reel and the final prints are, like method (2), very inexpensive, usually about \$15 per reel.

4. The picture is photographed on 16mm reversal film and a work print made from this by the reversal duplicating process. The original is matched with the completed work print and final prints are made by the reversal process. (In this method the work print can be eliminated and the editing done directly on the original, but this is not recommended because of the danger of damaging the original by accumulation of dirt and scratches). With the use of a work print the cost is about \$44 dollars per reel for the unedited film and \$20 per reel for the final copies.

5. The picture is photographed on 16mm reversal film, a work print made from the original by reversal as above, the original then matched with the work print. A "dupe" negative is made from the original and the final

prints made from the "dupe". The cost of this method is about the same as (4) for the preliminaries with the addition of the cost for the "dupe" which is about \$25 per reel. The final prints however are, like methods (2) and (3), about \$15 per reel.

Of these various methods, numbers (2) and (3) can be eliminated since the quality of the final picture is ordinarily inferior and method (2) is decidedly more costly unless large quantities of prints are needed. The reasons for inferior quality are not at once apparent and must be explained. In method (2) the difficulty is usually in encountering too many losses in definition through the many transfers of the image. This is not necessarily so as far as theoretical reasons are concerned, but to retain the best quality requires so much care that the average laboratory work is not satisfactory. Method (3) is capable of very excellent results except for one factor, *dirt*. With proper fine grain development, it is possible to get a 16mm negative with maximum detail and beautiful gradations. A print can be made from this that will leave nothing to be desired and if such results could be retained to the final copies there would be no criticism. However, it is necessary to handle the negative, cut and splice it. During this process the inherent good quality is inevitably ruined. Enough abrasions and dirt are collected on the negative to show up unpleasantly as white spots in the finished prints. Of course, just as much dirt is picked up on 35mm negative in handling, but the individual imperfections in proportion to the total picture area are much smaller and therefore almost unnoticeable. The seriousness of the dirt on 16mm negative depends entirely upon the care with which the film is handled. If extreme precautions are taken, the film handled with lintless gloves, and re-wound very carefully the dirt may be kept to a minimum, but even then it is apt to be more apparent than one would like it. Any 16mm negative is open to criticism on this point, whether it be an original or a "dupe". The "dupe" however can be made from an edited positive and therefore needs no splicing or handling other than its trips through the printer. When a "dupe" becomes too dirty to yield satisfactory prints, it can be discarded and another made. But when an original negative becomes dirty, there is practically nothing that can be done to save it. Attempts at cleaning with carbon tetrachloride are dangerous, for the dirt is apt to be ground into the emulsion worse than ever. The dirt problem is very much more aggravated in the case of a negative than it is with a positive, the amount of dirt which will completely ruin a negative being scarcely noticeable on a positive. The reason for this is that the dirt on the positive, as it is projected, is dark and comes and goes so quickly that it is scarcely noticed. Dirt on the negative, however, is transferred to the positive as clear spots and these show on the screen with extra prominence.

Method (5) has the same objections applied to it as (2) in that it entails a number of processes that are apt to cause a loss of definition. This loss, however, as in the case of method (2) can be kept to a point where it is not noticeable. Method (5) has the added advantage over (2) that it is a great deal less expensive.

This leaves methods (1) and (4). *Each of these is capable of maximum quality.* Often the claim is made that a 16mm reduction print from a 35mm negative is sharper than a direct 16mm reversal film by virtue of the reduction of the already fine detail of the 35mm image to the smaller proportions. This is an erroneous view because the image of the 35mm negative must be formed

on the 16mm film by a lens which is incapable of forming an image of *better* definition than a lens of equal quality can form an image of an actual scene on 16mm film. As a matter of fact 35mm to 16mm reduction printers usually use a lens of longer focal length than the usual 1 inch lens of the 16mm camera and it is well known that it is easier to obtain critical definition (minimum circle of confusion) from a short focal length lens than one of long focal length. Therefore in order that a 35mm reduction printer make as critically sharp an image as a good 16mm camera lens, it is necessary that the lens be even better quality than the 16mm lens. Actually this argument is splitting hairs, for completely satisfactory definition can be obtained by either of the two systems. The loss of definition between a reversal original and a reversal duplicate is also negligible. The main point is that the very fact of reduction of image from 35mm to 16mm *does not* improve definition over that obtainable by direct 16mm reversal film and a reversal duplicate therefrom.

The only real advantage of the reduction print from 35mm for projection purposes, is the increased brilliance of the picture. The 16mm print on positive stock has clearer highlights and can be made lighter in average density. The reversal film always tends to have slightly veiled highlights and greater over-all density. This advantage for the reduction print is offset by the fact that reversal copies have a tougher emulsion and usually give a longer projection life with less dirt and scratches showing on the screen.

Method (4) is obviously a great deal cheaper as far as film costs are concerned and it also has a decided advantage from the production standpoint. The 16mm camera equipment is much easier to handle on location and costs but a fraction of the sum required to purchase a 35mm camera of equal abilities. The 16mm camera also will give an increase in economy in the lighting budget for interior filming, because the short focal length lenses can be used at higher apertures without objectionable lack of depth of focus. Specifically this means that only about half the amount of illumination needs to be provided for the 16mm equipment to give a certain depth of focus.

The conclusion that this writer comes to is that for a silent motion picture, as long as 16mm projection prints only are needed, one can obtain as fine a quality shooting the picture directly on 16mm reversal film and making reversal duplicates from the original as he can by using a 35mm negative and making reduction prints therefrom. The direct 16mm photography further gives the advantage of less cost and greater convenience.

Addition of Sound to the Picture

As stated above, sound-on-film can be added to the film whether it be photographed on 35mm or 16mm film. Also the sound track negative can be recorded on 35mm or 16mm film. I am speaking of sound which is recorded for a film after the pictures have been made and edited. This is the type of sound recording usually put on commercial films and is distinguished from "lip synchronized" pictures in which the sound and picture are recorded simultaneously. If the sound is recorded on a 16mm negative, it is contact printed directly onto the final prints. If it is recorded on 35mm negative, the printing onto the 16mm print is done by a special sound optical reduction printer.

When a picture is made by our favored method of 16mm reversal original and 16mm reversal duplicate, and then sound is added, we strike a snag. The finished prints by this method have the emulsion on the side of the film which faces the light source of the projector. This is just the opposite from the

standard, established by the Society of Motion Picture Engineers, which specifies that the print should be threaded in the projector with the emulsion facing the screen. The result of the off-standard print is to put the sound track slightly out of the focus of the sound optical system, losing a certain amount of sound quality. Experiments have shown that this loss is hardly noticeable and would not be a serious objection with this type of film if it weren't for another factor which we would like to mention with emphasis.

Many manufacturers of 16mm sound-on-film projection equipment have designed at least some of their models so that the film channels scrape the sound track area on the back or celluloid side of the film as it passes through the picture gate and over the sound drum. Some even have not provided for the *emulsion* surface of the sound track to move through the mechanism without sliding over fixed rails! This seems ridiculous, for certainly a film, when run repeatedly on one of these projectors, will have its sound track thoroughly scratched and abraded, thereby causing it to give a great deal of background noise. In the case of a standard print run on a projector which scrapes only the back of the film, the deterioration of the sound track is not very rapid. But when an off-standard print, of the type which we know to be excellent from the picture standpoint, is run on such a machine, the results are disastrous. I have known a brand new print to be ruined in its first trip through a projector whose makers did not think it important enough to design the mechanism to handle the sound track area of the film with the same respect with which the picture area has always received, i.e., that the tension shoes and all fixed guides for the film be cut out or relieved at those parts where the picture area bears. In such a projector, the film *may* get through with only a minor amount of abrasion, but the danger is always present of a small amount of emulsion sticking to one of the shoes and causing a bad score to run the length of the sound track. So far as this writer has been able to determine, the only projectors immune from the above criticism are the Bell and Howell, Ampro, and R.C.A. Victor. Other makes have had fixed shoes or drums over which the sound track area of one side or the other of a film is forced to slide. In all of the machines inspected, a few minor changes in construction would completely eliminate the difficulty so that standard prints would not receive a slow punishment on their back sides and so an off-standard print will not be hopelessly scratched.

It is possible to make reversal sound duplicates from a reversal original by optical printing, thereby making the emulsion direction the same as the standard. This system seems to be the ideal way to make the copies and should receive the attention of more laboratories. So far it is believed that only one or two laboratories in the country are prepared to do 16 to 16 optical printing.

The final conclusion of this discussion is that, for silent films, 16mm direct photography, using the reversal process for both original and duplicate, will yield quality every bit as good as the more expensive method of using a 35mm negative and reduction prints from it. Also direct 16mm photography using the reversal process *could be* as good as the 35mm-16mm combination for sound film production if the laboratories would fit up for proper reversal duplication of sound film or if some projector manufacturers would make minor changes in their equipment so that films made with emulsion on either side could be used without danger to the sound track areas.



"Harmonius Discord"

John Lawhead

Advanced Medal Print

■ In the absence of Editor Young, we have selected Mr. Lucien Perona, an artist, to write this month's criticisms in order that our readers might enjoy an entirely different viewpoint. Read Mr. Perona's introduction on Page 355.

■ Here is a subject that in most cases becomes somewhat trying, but in this case Mr. Lawhead has done a remarkably fine job. The composition of this picture deserves special mention. The visualization of the subject leaves little to be desired and the holding of the values and form is extremely well done. There are, however, a few suggestions which I think would improve this print.

The composition would be improved if the drape in the upper right-hand corner had been omitted. I find it an unnecessary repetition of the line in the drape on the opposite side. This would have made it possible for a more interesting line to start with the sheet of music, giving the composition a more daring effect. The strong highlight on the end of the piano is a little forced. The relative values of the piano

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Second Award

Advanced Class



"City Plaid"

Gunnar H. Kampe

■ Particularly pleasing is the holding of the light in this picture. The controlling of the decided cross that is made by the tracks has been accomplished by the skillful reproduction of the texture of the pavement and the highlight on the newspaper being held by the figure on the right. The reproduction of this print may destroy the importance of this undoubtedly conscious attempt by Mr. Kampe. The only weakness of the rendition of greys are the two buildings. The five stripes in the lower left-hand corner are all of the same value. This corner would have been strengthened if the correct values had been kept. The building in the upper right-hand corner that plays such an important part in the composition is lacking in form and richness in greys. Mr. Kampe deserves congratulations in the way he has been able to control his subject and to keep it out of what is usually nothing but an attempt at a trick shot.

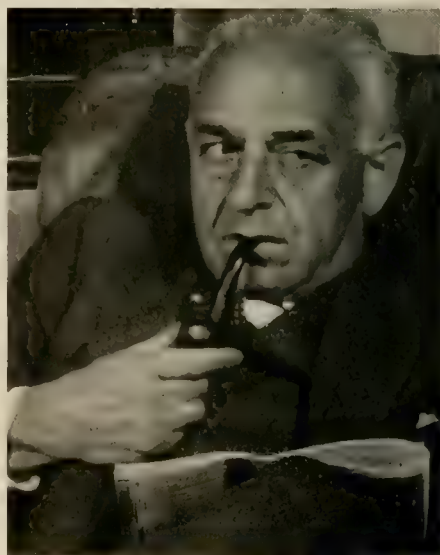
Data: Super Ikomat "A"; Zeiss Tessar F:3.5; 1/25th sec. at F:8 on S. S. Pan., in D-76, bright day; E. K. Opal C in D-52. 10x12" prints on 16x20" mounts may be obtained at the price of \$6.00 on application to Camera Craft.

Third Award

Advanced Class

■ There are many things about this portrait that are particularly pleasing and also disturbing. The general composition and placement of the hand is particularly good. The tonal quality and form in the face has been admirably translated. I find particularly disturbing the placement of the subject's knee. This part of the picture would have been strengthened if the knee had been lowered so that the magazine would have filled the lower part of the picture, thus introducing into the composition a new texture. The knee does not give the picture depth but actually destroys the feeling of form. The complete relaxation of the subject would have been more pronounced and the composition improved if the head had not been trimmed. There is a certain monotony in having every side of the figure trimmed. The composition would also be improved if the highlight on the window pane could be eliminated. The simple dark note introduced into this composition in this corner would help to give depth and form to the shoulder and chair. I also suggest the controlling in value of the breast pocket handkerchief.

Data: Zeiss Kolibri; Tessar 5 cm. F:3.5; 4 seconds at F:8 on Fine Grain Plenachrome; 2 Photofloods; Brovira Royal Medium in Amidol; Bromide; Sease No. 3. Partial toned in Permanganate-Sulphide. 11x14" prints on 16x20" mounts may be obtained at the price of \$10.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Tycoon"

Robert Mishell

Fourth Award

Advanced Class

■ The simplicity of this composition and control of the tonal values in this print by Mr. Wing leaves little to be desired. The only two weak spots in the composition are the value and texture of the torn sign on the face of the building, and the texture of the shingled roof. The sign does not seem to be a part of the building in tone and is completely lacking in form. The roof appears "fuzzy" in contrast to the clear rendition of the values of the rest of the building.

Particularly pleasing is the amount of detail and form that has been preserved in the shadows. The reproduction in this case will no doubt destroy the effectiveness of this, but the placing and holding of the accents will be preserved. The texture, tonal quality and form of the weather-beaten and rough boards on the face of the building is strengthened by the simplicity and tonal quality of the sky.

No Data



W. E. Wing

Fifth Award

Advanced Class



"Men at Work"

Ellis W. Foote

hand corner would have allowed the grouping of the workers in a more interesting mass. Obviously this could not be accomplished. However, by adding to that side of the print another inch, and trimming the righthand side, the same effect might result. A picture of this type depends a great deal on its dramatic presentation. It is in this that the placement of a few well chosen accents would help.

Data: Voigtlander; 9x10 cm.; S. S. Pan in D-75; 1/25 sec. at F:11; PMC 11 in D-72. Bromide. 10x12" prints on 14x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Disks"

F. M. Beckett

Amateur Medal Print

■ This admirable print suffers only in the tonal quality and rendition of detail of the earth in the upper left-hand corner. For a print of this type to be weakened by this fault is almost inexcusable. The composition's strength depends on the repetition of forms whose color values in grey have been strongly and accurately retained. This is true also in the control and detail of the shadows. The shadows in this case have been used as accents to their fullest advantage and help in the translation of form, so clearly expressed in the disks. These disks, by the way, leave no doubt as to their ability to cut into the earth. It is in these qualities that a print of this type makes up for its possible lack of human interest. The photographer's desire to interpret the strength and form which he felt in this subject is highly commendable. I suggest to Mr. Beckett the adding of space at the top of this picture so that the edge of the third disk from the left will not end exactly at the edge of the print. I like particularly the use of the line made by the lock and its function of leading into and supporting the composition.

Data: Kodak Recomar 33; Verichrome Film Pack; 1 sec. at F:32 at 5:45 P. M., in July; Pyro-Metol; Vitava Opal G in D-72. Not for sale.

(Continued from Page 349)

itself and the highlight destroys the feeling of form in this corner. The clear definition of a horizontal line behind the child, separating the edge of the seat, would have given more depth and would have controlled the only harsh line in this composition—the line made by the child's back.

Data: Leica; 50mm. Elmar F:3.5; Agfa Plenachrome; 1/20 sec. at 3.5; 2 bridge lamps, 200 W. each; bromide; Agfa Antique in D 72; Sease 3+Metol. 11x14" prints on 16x20" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Second Award
Amateur Class

■ The young lady's blouse in this picture contributes to a large degree to the success of this print. Mr. Looney has retained the importance of this and has used it to its fullest advantage. The translation of the color into greys and the luminosity of this blouse plus the form retained is excellent. It gives the one accent in texture that this print needed. The simplicity of this composition has not only complemented the portrait but has also retained the character of the subject. It is unfortunate that the detail in the shadows of the chair have not been retained sufficiently to support the figure with more strength. The one weakness in the posing of the figure was not to have allowed more space on the right. The hands being so close to the edge of the print suffer from the lack of necessary contrast and tend to lead out of the composition.

Data: 4x5 View Camera; Turner Reich lens at F:16; 1/2 sec. on Dupont Pan with two photofoods in Metol-Hydroquinone; Defender Velour Black DL in Amidol. Prints will be exchanged with other prize winners in these competitions only.



"Maurine" Eldredge Looney



"Circus Horses" Ray Cooper

Third Award
Amateur Class

■ Here is a subject that takes more than sentimentality to make a good picture. I have seen many pictures of animals that depended solely on their capacity to bring to mind ones own pets. The simplicity, naturalness and strength of this composition is worthy of special mention. The tonal values have been successfully retained in all but the neck of the horse on the left. This large mass of color does not have enough form to support the weight of the head. To correct this I suggest that Mr. Cooper trim about one-half inch off the top of the print. The composition would be improved if the tonal value of the rope in the lower right-hand corner had been more distinct. This would have introduced a repetition of the line of movement of the horses' heads and would also have given to the foreground added depth.

Data: Super Ikomat A; F:3.5; 7 cm. Zeiss Tessar; 1/100 sec. at F:6.3 on Panatomic in DK-76; print on Vitava Proj. B in D-72. Not for sale.

Fourth Award
Amateur Class



"Live Bait"

David and Eleanor Craig

■ The simplicity of this picture in both composition and tonal quality is at once evident. The strength of this is due primarily to the sequence of tonal values starting in the lower right-hand corner and progressing to the upper left. The detail preserved in the net and the naturalness of the two well placed figures is excellent. However, I have one criticism of the print and that, I confess, is purely a personal one. The original is printed with a blue cast. I cannot see where the addition of color to the print adds to its effectiveness. The

texture and tonal qualities of the water and the highlights has been excellently translated, and the addition of color has not improved it. It is my belief that the printing of this picture in black and white would enhance its richness and compositional strength.

Data: Graflex; Carl Zeiss Tessar IC; 1/75 sec. at F:8 with K-1 filter, late afternoon, light clouds; Portrait Pan in Metol; Opal in D-64; Ruzicka's Gold-Thiourea toning. 11x14" prints on 16x20" mounts may be obtained at the price of \$10.00 upon application to Camera Craft. No exchanges.

Fifth Award
Amateur Class

■ The strength and clearness of the tonal values that Miss Heim's remarkable print retains is worthy of special mention. The distinct texture and tonal value of the leaf in contrast to the lily has been very skillfully translated. It is the control of these values and accents which give this print its feeling of sunlight and three dimensional form. The detail in the shadows on the lily give depth to these well placed accents. The holding of the form in the lily is complemented by the simplicity of the background. The only weakness in the composition is in the trimming of the bottom of the print. There is no adequate support for the masses of detail and I feel that the general composition would have been improved if about one inch were trimmed from the bottom and the same amount added to the top of this print.

Data: 3¼ x 4¼" R. B. Auto Graflex; B. & L. Zeiss Tessar F:4.5 lens; 1/2 sec. at F:32 with K-2 filter, sun shining through window, 5:15 P.M.; Defender XF Pan in D-76; printed in Defender Velour Black T in Amidol. Approximately 6x8" prints on 14x18" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Calla Lily"

Johanna Heim

Monthly Competition

Introduction

It has long been my desire to express my opinion on the translation of color and form into photographic greys. As a painter my primary interest has been to reproduce and transpose on canvas, to the best of my ability, the color and texture of the subject.

In photography, the primary object should be the translating of color into greys—the holding of form, the placement of accents and the tonal control of these regardless of the “Key” or “School” in which the subject has been photographed.

Without the aid of color this becomes necessarily more difficult. This same task confronts the etcher, whose work must assert itself when seen across the room, and when interest quickens, the same picture must be able to stand close scrutiny.

The criticisms which follow are based on form, composition and tonal quality as seen by one who knows but little about the technical aspects of photography.

Lucien Perona

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: Gunnar H. Kampe, for the Fort Dearborn Camera Club; John Lawhead and Robert Mishell, for the Los Angeles Camera Club; Ellis W. Foote, for The Pack Rats; and W. E. Wing, for the Photographic Society of San Francisco.

The following won points for their clubs in the Amateur Class: Ray Cooper, for the Miniature Camera Club of Detroit; Eldredge Looney, for the Omaha Camera Club; Johanna Heim, for the Photographic Society of San Francisco; F. M. Beckett, for the San Jose Camera Club; and David and Eleanor Craig for the Washington Pictorialists.

Contributing Clubs

Aluminum Camera Club (New Kensington, Pa.)	Long Beach Camera Club (Calif.)
Arizona Pictorialists (Prescott, Ariz.)	Los Angeles Camera Club
Austin Camera Club (Texas)	Milwaukee Camera Guild (Wisc.)
Boise Camera Club (Idaho)	Miniature Camera Club of Detroit (Mich.)
Calgary Y Camera Club (Canada)	Omaha Camera Club (Nebr.)
Camera Pictorialists of Bombay (India)	The Pack Rats (Pasadena, Calif.)
Fort Dearborn Camera Club	Photographic Society of San Francisco
Golden Gate Miniature Camera Club (San Francisco)	Photo Pictorialists of Milwaukee (Wisc.)
Kamera Kranks Club (Durham, Calif.)	Riverside Camera Club (Calif.)
	San Jose Camera Club (Calif.)
	Washington Pictorialists (D. C.)

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club.....	22
Pictorial Photographers of America.....	12
Los Angeles Camera Club.....	11
Photographic Society of San Francisco	7
Montreal Camera Club.....	2

Small Clubs Advanced Class

The Pack Rats.....	21
Whittier Camera Club.....	3
Washington Pictorialists.....	2
East Bay Camera Club.....	1

Large Clubs Amateur Class

Golden Gate Miniature Camera Club....	15
Pictorial Photographers of America.....	9
Photographic Society of San Francisco	6
Miniature Camera Club of Oakland.....	5
California Camera Club.....	4
Camera Club of Ottawa.....	3
Miniature Camera Club of Detroit.....	3

Small Clubs Amateur Class

Omaha Camera Club.....	8
Riverside Camera Club.....	7
San Jose Camera Club.....	7
Washington Pictorialists.....	6
Camera Club of Long Beach.....	3
Calgary “Y” Camera Club.....	2
Norfolk Photographic Club.....	1

Club Notes

Pictorial Photographers of America

Concluding a highly successful season, the Pictorial Photographers of America held their annual meeting June 2, at the Architectural League, 115 East 40th Street, New York. The meeting was preceded by a dinner in honor of Mrs. Antoinette B. Hervey, who, at the meeting, was elected Honorary Vice President, a position held for many years by the late Mrs. Gertrude Kasebier.

Other officers elected are: Ira W. Martin, president; Everett Masten, vice-president, and William J. Lane, secretary-treasurer. New members of the Executive Committee, class of '39: Gayle A. Foster, Robert Janssen, and Irving King. District Executives: Karl Struss, Hollywood, Imogene Cunningham, Oakland, Edwin F. Dreher, Novato—all of California; Laura Gilpin, Colorado Springs, Colo; George Henry High, Chicago; John Allen, Philadelphia; Dan J. Broderick, Windsor, Conn.; and Frank Liuni, New York.

Cups were presented to the winners of the two print competitions held monthly throughout the year: John Muller, in the advanced class, and Gayle A. Foster in the "mid-month" group. In the June competition, "Trees," Thomas O. Sheckell made a clean sweep, taking all three places.

Mr. Sheckell was also the speaker of the evening, talking on "Twenty-five Years in Pictorial Photography." His address was the second of a series on the main schools of present-day photographic thought, the first having been delivered the previous month by President Martin on "basic or fundamental photography"—commonly called "purist" or "f.64." Taking smiling issue with some of the points then raised by Mr. Martin, Mr. Sheckell clearly stated his philosophy of pictorialism, and illustrated his points with a number of prints by himself and other noted salonnists.

Mr. Martin, in a final summation, made it clear that the P.P.A. stands for the advancement of photography as a whole, asking only that the individual photog-

rapher strive for constant improvement in his efforts to "do the thing he sees as he feels it should be done."

Photography at the Iowa State Fair

For many years the camera clubs of Iowa have been asking for a classification for photography at the State Fair. This has been granted and a desirable space allotted to the competition in the Educational Building. There is no entry fee. The competition is open to the world. There seems to be cash prizes and ribbons for the winners. For further information, address A. R. Corey, Secretary, Des Moines, Iowa.

California Camera Club

On July 21, Mr. Ralph Young of San Francisco will lecture at the Club-rooms, 45 Polk Street, on Illustrative Photography and Color Work.

Our Miniature Section is now organized under the Chairmanship of Miss Billie Burns. Many members are interested and we hope to see good results of this section within the next few months.

The School of Photography, under the direction of Mr. R. H. Mercer, has been highly successful. Many students of this class have since joined the club, proving that the school has given them a starting interest in photography and an incentive to produce good pictures by their own efforts.

On account of the resignation of Mr. A. Anderson as a director of the club, Mr. Robert W. Ellis was elected at the business meeting on June 9 in his place. Mr. Ellis will have full charge of the demonstrations and has already planned events of interest for the balance of the year.

The monthly print competition winners for June were Miss Johanna Heim and Mr. C. Stanton Loeber. Mr. Loeber, a new member, broke precedent by also receiving honorable mention on another print entered. A gate prize will be offered at the July competition, in addition to cash awards for first and second choice. Each member entering a print will be entitled to a chance on the gate prize—one chance for each print entered.

Association News

Very Comprehensive Program Planned For 1936 P. A. of A. Convention

As business conditions improve, professional photographers find themselves specially interested in learning how to get their share of what additional money the public has to spend. Accordingly, while a number of excellent demonstrations are included in both the portrait and commercial programs for the coming Chicago convention of the Photographers' Association of America, at the Hotel Stevens, August 24 to 28 inclusive, the main emphasis will be on business topics.

Write the Executive Manager, P. A. of A., 501 Caxton Bldg., Cleveland, Ohio, for information about membership, convention admissions, convention space, or other details. Four full days of unparalleled instruction and entertainment. Better plan now to come.

Dealers' National Meeting, Chicago, August 25th and 26th, 1936

A National Meeting of the Photographic Dealers Association will be held in Chicago, August 25th and 26th, during the same week that the Professional Photographers Association holds its convention, at the same place—Stevens Hotel.

Here is an opportunity to attend both gatherings. At the National Meeting important matters will be discussed, also election of officers.

Plan to come. For further particulars address S. A. Robbins, Secretary of the National Photographic Dealers Association, 600 Madison Avenue, New York, N.Y.

Railroad fares have been reduced; hotel accommodations may be had at minimum cost. Come and meet dealers from all sections of the country.

More news will be announced shortly.

Notes and Comments

Increased Duty

In accordance with a recent decision of the Treasury Department, the importers of foreign cameras will find it necessary to advance their prices about 33 1/3%, due to the increased duty to be levied.

It will be a serious blow to all photographic supply dealers and at a meeting of importers it was suggested that all of them send telegrams to their Senators and Congressmen, protesting the additional rate in the sense that it will prove harmful to the camera industry to raise the prices of cameras with which no domestic make can compare.

E.K. Store Issues New Catalogue

A new catalogue of professional photographic equipment has just been issued by the Eastman Kodak Stores of Chicago, Ill. The 80-page book is a very well printed, fully illustrated presentation of the latest in Studio lighting, laboratory equipment, and photographic materials of all kinds. Address the Eastman Kodak

Stores, Inc., 133 N. Wabash Avenue, Chicago, Ill.

Gevaert Enlarging Paper

Three new Gevaert papers are being marketed under the heading of K 33, the first having a new distinctive surface, Platino-Gravure, intended especially for highest quality salon projection prints. It is particularly suitable for exhibition prints, the surface being not too rough, with a conservative lustre and coated on a stock that is just off the white but not too buff in color. Another fast enlarging paper, Novabrom K33, giving cold tones and available in two degrees of contrast, Normal and Extra-Vigorous, is very suitable for high class commercial prints. The third paper, Artex K33, is supplied in Normal contrast only and is slower and warmer in tone. It is especially suitable for printing from paper negatives. Order from The Gevaert Co. of America, Inc., Dept. CC, 423 West 55th St., New York, New York.



New Kind of Photo-Album Goes Into Picture Frame Which Exhibits Any Page Desired

The pleasure of keeping snapshots in an album and at the same time exhibiting any of them in a picture frame, although still in the album, is afforded to amateur photographers by the combined use of two new devices of the Eastman Kodak Company, just announced. One is "The Snapbook," a 20-page album with a spiral binding, the other "The Snapbook Frame" which is a leather finished, gilt embossed picture frame into which the album is inserted with any page in front that is desired.

Thus, without need of turning pages to find favorite snapshots as in the ordinary album, you may enjoy them exhibited in an attractive frame on desk, table or wall, as long as you like and you may put a different page in front at any time. With a full page enlargement, the effect is that of a framed single photograph. The "Snapbook" and "Snapbook Frame" are sold as a complete unit.

Announced in connection with these two new Eastman products is another new device, the "Snap-sticker" which is a sticker gummed on both sides for easier mounting of snapshots in an album.

Ednal Moves

The Ednal Company of New York, importers and distributors of optical glass, filters, and scientific and technical instruments, has moved to new and more spacious quarters at 160 Fifth Avenue, Suite 704, New York City.

Miniature Film Pack and Plate Camera

A rather unique camera using film packs and plates with focussing on a full size ground glass screen is being marketed by the National Photo Supply Co., 21 West 17th Street, New York. The camera is a miniature as far as dimensions are concerned, but has the flexibility of double extension bellows and individual plate holders for special uses when a full pack or roll is not wanted. It has a front covering of soft leather which allows a filter or cable release to be left on the camera when folded.

William F. Folmer Passes

We regretfully announce the death in Rochester, on May 8th, of William F. Folmer, inventor of the Graflex camera, founder and first president of the Folmer & Schwing Manufacturing Company.

Mr. Folmer developed the Graflex camera in the middle 90's in order to make candid pictures of his little daughter. It eliminated the "head-rest", making possible realistic, life-like pictures and brought action photography within easy reach of all camera users. Thus did Graflex photography open a new field in amateur photography.

With the death of Mr. William F. Folmer the photographic industry loses a figure who contributed much to its progress and whose achievements will long stand as a monument to a lifetime of accomplishment.

Prize Contest

One of Camera Craft's prominent advertisers is sponsoring a prize contest which is open to all readers. Three prizes consisting of photographic devices valued at more than ten dollars each will be awarded to the three best replies to the question: "How was this picture made?" (The picture is reproduced in the back advertising pages of this issue.) The replies must be limited to twenty-five words and sent to this magazine not later than July 15th. The actual data of how the picture was made will be published in the August issue and the winners of the contest announced in September. Address your replies to Box 123, CAMERA CRAFT, 425 Bush Street, San Francisco, California.

P. Douglas Anderson Honored

P. Douglas Anderson, instructor in charge of the photography courses of the University of California Extension Division, has just been made a Fellow of the Royal Photographic Society of Great Britain. This honor came to him at the last meeting of the council, held May 11 of this year. Anderson was previously an Associate in the Society. Notification of the award comes in the eighth year of Anderson's teaching on the University Extension faculty, during which time he has done yeoman work for the cause of better photography.

Smith Brothers, Oakland

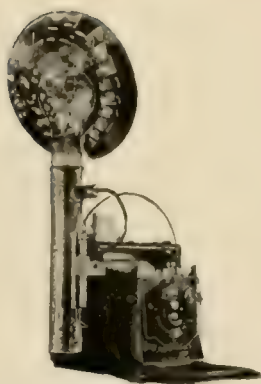
D. C. Mowat has just been made manager of the Camera Department of Smith Brothers' two stores. Mr. Mowat has combined his knowledge of illustrative art with photography and so will be able to help his customers solve their photographic problems of composition, etc. He intends to keep his department modern in design and operation. Smith Brothers have a large stock of photographic equipment which can be seen at 1721 Broadway and 480 13th Street, Oakland, California.

MinnieStrips

The H. & R. Camera Exchange of 438 Market Street Philadelphia, Penn., is extending their inexpensive enlarging service for miniature negatives to include MinnieStrips—a strip of prints from any roll of 35 mm. negatives of 40 pictures or less for 25 cents. The earlier service, MinniePrints giving $3\frac{3}{4} \times 4\frac{1}{4}$ " prints from miniature negative for only 7 cents each will of course, be continued. Miniature camera owners who have accumulated a number of rolls of unprinted negatives would be wise to have them printed up—often the positive will reveal merit that was overlooked when the negative was inspected.

Lighting Book

"Lites and Lighting" is a little book put out by the Beattie's Hollywood Hi-Lite Co. which gives many pointers in portrait lighting. The book has reproductions of portraits and the accompanying floor plans of the lightings used. The book will be sent to anyone interested on receipt of 25 cents in coin or stamps. Address Beattie's Hollywood Hi-Lite Co., Div. of Otto K. Oleson Co., Ltd., Hollywood, Calif.



A New Speedgun

The Mendelsohn organization announces a new Speedgun, the Universal, the first instrument of its kind to take into account and to coordinate for variances in photoflash bulb and camera shutter construction. As with previous models of the Mendelsohn Speedgun, (it isn't a Speedgun if it isn't a Mendelsohn), the instrument is all-electric. Compensation for snappy or lazy shutter action is effected electrically. One piece, all metal design assures maximum endurance. Contact with shutter is by cable release through regular cable release socket. No special fittings or mountings required. Cameras such as the Rolleiflex and Makina, which formerly required factory installed adapters are now synchronized quickly and simply by means of the new Universal Speedgun. Fitting any and all between-lens shutters, the Universal Speedgun is recommended for photoflash service where a high degree of accuracy and maximum light coverage are desired. On sale at leading photo dealers, it may be tested by any camera owner simply by attaching to camera. For further details, including estimate on converting Model C Speedguns to the new Universal type, write to S. Mendelsohn, 202 E. 44th St., New York City.

Nothern Photo Supply Company

On June 1st, the Northern Photo Supply Company moved their retail and wholesale business into a new and larger store at 521 Second Avenue South, Minneapolis, Minnesota. This firm has been in business for many years and is well known all over the United States. A large supply of domestic and foreign Kodaks, cameras and equipment can be seen at this address.

New York Institute of Photography Publish New Catalogue

We have just seen a copy of the new catalogue published by the New York Institute of Photography. From many points of view this unusual booklet will be worth reading by anyone interested in photography. It not only contains interesting and outstanding examples of photographs made by students of the Institute, but it describes many opportunities for the man or woman who wishes to take up photography as a career.

The New York Institute has the distinction of being the only school that offers both resident and Home Study courses in still and motion picture photography. And they have been at it many years. The new catalogue celebrates their 26th anniversary.

Glancing through the catalogue, it is interesting to note some of the noted authorities who have helped in the preparation of the text material for the various courses offered by the Institute. Such men as Nicholas Haz, Jack Price, Fred R. Bill, Ashley Baker, Floyd Crosby, John Ertler, Louise Fetzner, J. Vincent Lewis, C. B. Neblette, Lloyd I. Snodgrass, Gordon S. Mitchell, Dr. Allen F. Odell—to mention just a few.

A copy of the catalogue can be obtained by writing to the New York Institute of Photography, 10 West 33rd Street, New York City.

Bigger Miniatures

A new record in photographic enlargement has been achieved by the well-known New York photographer, Ivan Dmitri, using a Du Pont Superior Panchromatic Film. This photograph, showing Wyoming wild horses in action, was made from a 1"x1 3/8" negative which was enlarged in a single step, without retouching, to a size measuring 11 1/2"x40". The feat is all the more remarkable because only a 3/8"x1 3/8" section of the original film was used. This is a 97-diameter enlargement, increasing the area of the picture 9400 times. Its accomplishment suggests greater possibilities in enlargement through the use of this improved film, as an 8"x10" negative, enlarged proportionately, would produce

a picture half a block long and six stories high.

Why Not Start a File?

You, who ride photography as a hobby-horse, can and will be envied by those who follow any other type of hobby. The highest possibilities in the art of photography are within your reach—yet, you must work to grasp them. And as you advance in your work, new developments in the art are taking place—offering new problems—new fields to conquer.

Few hobbies can offer the reader the fascination that is to be found in photography—its sustaining interest—its diversified field. The true hobbyist avidly grasps at every piece of literature that might help him in his work. And the catalogs of stock houses listing new equipment, cameras, lenses, supplies, etc., prove a prolific source of ideas in the modern equipment, etc., that they offer. Burke & James, Inc., of 223 W. Madison Street, Chicago, issue such a Sales Bulletin. It is free for the asking. Every photographer should have a copy.

New Light Weight Tripod

Henry Herbert announces the importation of a new tripod, the TRI-COM-POD. An interesting feature of this tripod is its swivel-top which revolves, tilts and locks in any position.

The TRI-COM-POD is compact and light, fits with ease into the pocket—yet is, at the same time, a sturdy, durable and rigid device that extends to a height of four feet and is equipped with a swivel-top head which allows the camera to be tilted to any conceivable position and then locks securely by a simple turn of a key.

TRI-COM-POD has 11 sections. As these are unusually short, they not only make the tripod extremely compact but enable rigidly locked adjustments at various heights. Legs are tipped with substantial rubber grips to prevent slipping. This feature also obviates damage to floors and rugs when pictures are made indoors.

For further information on this desirable photographic accessory, we suggest that you write to Henry Herbert of 483 Fifth Ave., New York.

Our Book Shelves

Amateur Films, by Alex Strasser. Published by Link House Publications Ltd., of London. 158 pages, 4¾ by 6½" cloth bound, \$2.50.

One of the most valuable books to be offered to date on the subject of amateur movies is a new book by Alex Strasser, translated from the German by P. C. Smethurst. Mr. Strasser is a professional film worker in Germany, having had experience in writing, direction, and camera work.

The book, "Amateur Films" is unusual in that it restricts its subject matter to planning, directing, and cutting amateur films and includes no dissertation on photographic technicalities or camera manipulation. Devoting itself solely to the problem of what to set before the camera rather than what goes on inside the camera, it is far more complete and instructive on these matters than many of the books on amateur filming which have chapters on all phases of motion picture technique.

Mr. Strasser's work is particularly valuable for the cine worker who is desirous of making a real film as opposed to a series of moving snapshots. Seven types of films are outlined and analyzed, rules for the preparation of the shooting script are explained with many examples in the form of actual scripts which may be used by amateurs in their own work. The niceties of "montage" or cutting are discussed and clarified by clever photographs which give, as nearly as possible in a series of "stills", the correct and incorrect editing methods. For the amateur who is always wondering what to shoot, this book will be very valuable.

Children in Action, compiled and edited by Heyworth Campbell. Published by Dodge Publishing Co., of New York. 8¾"x11¾", spiral bound, \$2.75.

This is an unusual collection of photographs of children up to six years of age

carefully selected from the best work of this type throughout the world. This book points out in a really startling way the possibilities in pictures of children. We do not mean that this is a new field or discovery in photographic endeavor but that the photographs, here collected, present an approach that has been tried too little. Almost every budding photographer begins by taking snapshots of his or her or others children and although the results are immensely valuable to the mother and father to anyone else it is only a poor photograph of a child. **CHILDREN IN ACTION** points out that when this photographer has perfected his technique he should return to his first subject and treat it in the manner it deserves.

Fifty Dollars a Week with Car and Camera, by Paul Glenn Holt and H. Rossiter Snyder, published by Rossiter Snyder Publishing Company of New York. 6x9", paper, 50c.

The Itinerant Photographer, by George H. Chappell, published by Schoenig & Co., of New York. 5"x7", paper, 50c.

These two booklets offer a complete course in free-lance photography. Both are crammed with information offered on good authority by men with long experience in the field.

"Fifty Dollars a Week with Car and Camera" formerly sold for \$1.50 in a larger edition. It has now been condensed to conform with the rest of the Snyder Series on Camera Journalism and is Number 12 in this series that has proven its worth many times before.

"The Itinerant Photographer" is a very practical little book and the author takes you right out on a trip pointing out the possibilities and pitfalls as you go along. Mr. Chappell offers a surprising number of ways in which one can turn his camera to making money.

Classified Advertisements

Rate 6 cents a word; minimum \$1.50 each insertion, prepaid.

OUTFITS FOR SALE

◆Vollenda, f:3.5 in Compur, filter; Versatile f:6.5 x9 cm. Steinheil, f:4.5 in Compur, accessories; two exposure meters; optipod. All as new. \$60.00. Will sell separately. Carroll Coleman, Muscatine, Iowa.

◆Graflex, 3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Series "D" Revolving Back with Schneider Xenar 7 $\frac{1}{8}$ " f:3.5 lens, F. P. A., new condition, \$95.00. Schneider Tele-Xenar 11 $\frac{1}{4}$ " f:5.5, new, \$50.00. Graflex Roll Film Holder 3 $\frac{1}{4}$ x4 $\frac{1}{4}$, new, \$5.00. Graflex Cut Film Magazine 3 $\frac{1}{4}$ x4 $\frac{1}{4}$, new, \$10.00. 3 - 3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Graflex Plate and Cut Film Holders \$4.50. Dallan 6 Tank 3 $\frac{1}{4}$ x4 $\frac{1}{4}$, new, \$3.50. Frank A. Farnsworth, 77 Amherst St., Manchester, N. H.

◆3A Graflex with f:4.8 Goerz Ceylar Lens 168mm. focus. Takes 6 postcard size pictures or 12 pictures 2 $\frac{3}{4}$ x3 $\frac{1}{2}$ on 122-6x film. Good condition. Bargain Price, \$26.50. M. Ortega, 2333 Greenwich, San Francisco, Calif. Phone Fillmore 7586.

◆Graphic Cycle 6 $\frac{1}{2}$ x8 $\frac{1}{2}$ View with anastigmat lens. 8x10 Ansco Printer, Premo 4x5 View. Seneca 5x7 No. 8 View. 15 Vol. Law Books. Portrait f:4.5 lens 20". National Studios, Bucyrus, Ohio.

◆Studio camera, shutter and stand; View cameras—8x10, 6 $\frac{1}{2}$ x8 $\frac{1}{2}$, 5x7, P. C., one each; holders and lenses; one Photo-Lite. Consider Graflex. Swanets, 323 5th Street, Santa Rosa, Calif.

◆DeBrie 35 mm. 400 foot camera—in new condition—complete with 3:5 Krauss Tessar and four magazines and DeBrie tripod for sale cheap. Write for photos. Frank Jacobs, 1213 Third Ave., Seattle, Wash.

◆5x7 E.K. View, two lenses, Goerz-Dagor f6.8, 7 inch focus; f6.8, 4 $\frac{1}{4}$ inch focus, compound shutters. Special carrying case, 9 cut film holders. Good as new. \$90.00. Parry, 701 Fell St., San Francisco, Calif.

◆Magic Eye Eyemo 12-16-24 speeds, 1/240-1/480 sec. exposures, Cooke f2 lens, factory guarantee. Address M. E. E., care Camera Craft, 425 Bush St., San Francisco, Calif.

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◆3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Series "D" or Auto Graflex wanted. Will exchange scarce U. S. stamps or Bureau Prints. Describe fully; state price. R. L. Treweeke, 553 South Volusia, Wichita, Kansas.

◆8 $\frac{1}{4}$ inch f:4.5 Heliar lens, must be in sunken mount to fit a 4x5 R. B. Autograflex. Robert A. Officer, 3434 Waverly Drive, Los Angeles, Calif.

HELP WANTED

◆Salesman for retail photographic store in Chicago. Prefer man experienced in photographic selling; with two years college education. Give full details. Address C. P. E., care Camera Craft, 425 Bush St., San Francisco, Calif.

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CAMERA CRAFT



"Hawaii"

Mike Roberts

August 1936

NEW APPROACH TO FINE GRAIN

THE PACK RATS

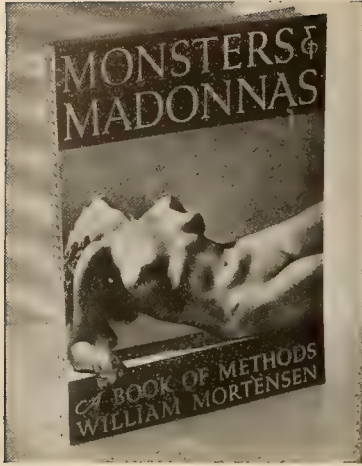
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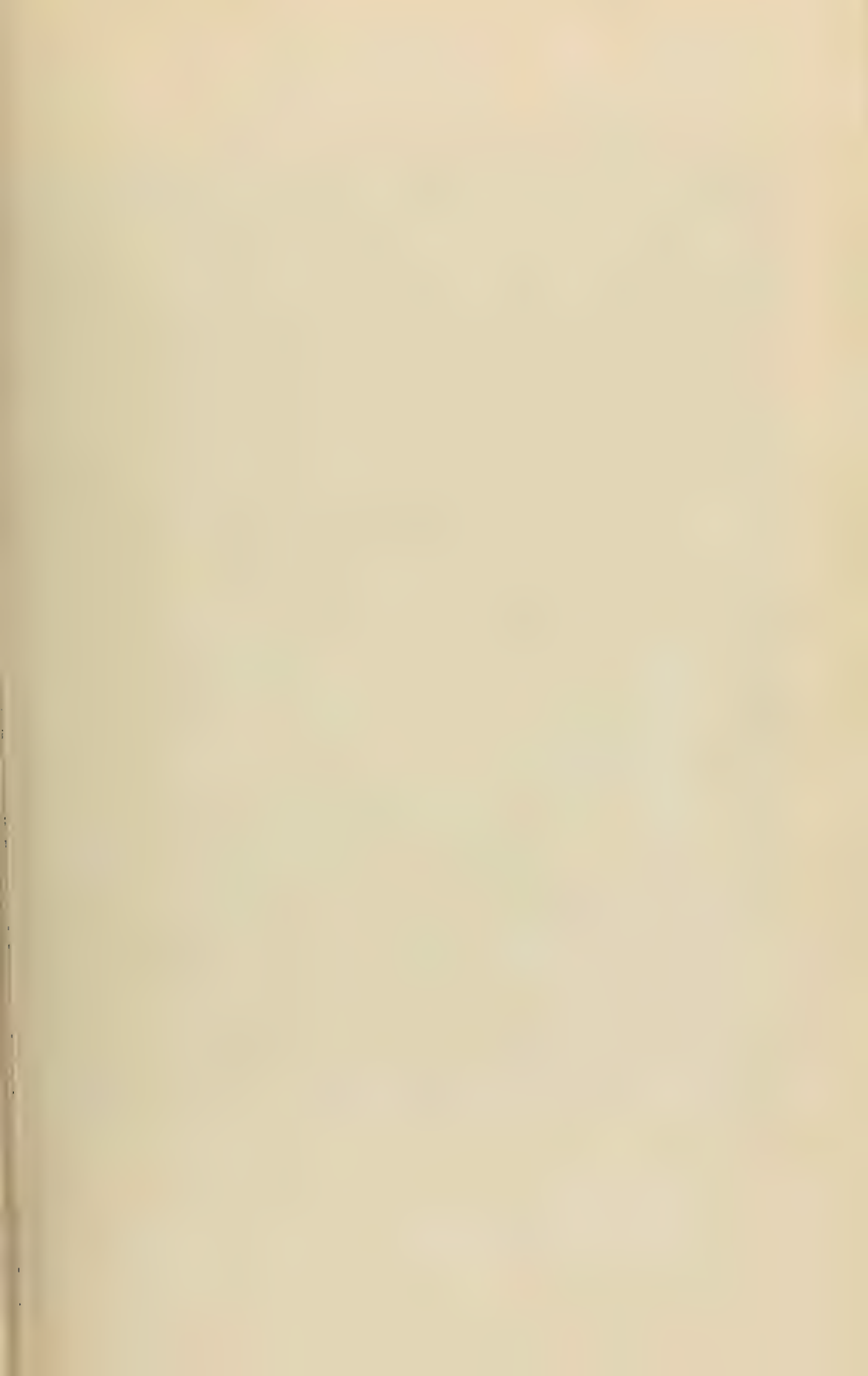
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"Cottage in the Grove"

Alexander Keighley

19th Los Angeles International Salon

The Pack Rats

Fred R. Archer

WITH the first of the year a new name crept into the competition ranks of CAMERA CRAFT. Stated simply as the Pack Rats of Pasadena, California the name sounded so unphotographic that it created an unusual interest. Who were these photographers and why the name Pack Rats?

Early in nineteen hundred and thirty a group of young men interested in photography as an adjunct to their periodical trips into the desert decided to organize as a club. In casting about for a name they finally decided on The Pack Rats. This name was suggested by Bob Brewer whose ability to make either a good photograph, to engrave the smallest die or to make the most intricate of jewelry has given him plenty of opportunity to ply his many arts in the designing of the cups, medals, certificates and even the favors used at the club's annual banquets. These favors, by the way, are always interesting and are always something pertaining to the desert. One year they were Tarantulas, another year Buzzards, again Rattlesnakes and this year Scorpions, all fashioned with cardboard and wire.

The simile between these Pack Rats, whose love for the desert makes them pack into the arid expanses to photographically record its many moods and wonderful scenery, and the little denizens of the desert who can tug and pack seemingly impossible loads from one place to another was the inspiration for the name; the members having on their various desert trips had many and varied experiences with these little animals.

They have at times "met up with", as the old desert rats would say, some Pack Rats that they do not like. One member while peacefully slumbering in his sleeping bag by the high sand dunes of the Mojave desert was awakened by a scraping noise. Imagine his surprise when sweeping his flashlight over the surrounding country he saw his shoes some forty feet away on the steep side of a huge dune and the shoes being pulled and tugged at by a couple of these industrious little rodents, also imagine his chagrin at his carelessness when upon recovering the shoes he found that the rawhide laces had already served for a good meal and but little of them was left—but more of the club and its activities.

It is a small club whose presiding officer is called the Imperial Squeak while the Secretary-Treasurer is called the Squeaketary and the club boasts only eleven members. It is a loose knit organization not hampered with burdensome rules and regulations as are many of the larger ones. The very name suggests that the members are open to fun as well as



"Canyon Walls"

Shavenau Monsen

to the more serious work — but who is there that does not want to play now and then? There is an old saying that "All work and no play" does something or other to us and the Pack Rats do have fun.

Some of the larger photographic clubs are almost wholly social clubs and their photographic attainments are almost nil. Not so with the Pack Rats — they have a yearly program and it is rigidly adhered to.

The meetings are held twice a month at the Pack Rats Nest which at present is the studio of Shavenau Monsen, son of the late Dr. Frederick Monsen whose desert and Indian photographs are too well known to require any augmentation here and which constitute an historical document of many years on the desert as well as a panorama of never to return Indian life.

Membership in the club is by invitation only and acceptance as a member means that the man elected has been subject to a rigid investigation before being tendered the invitation and that it has been unanimously decided by the members that he will wear well with them, for there must be no stress or strain on the even temper of this organization. A misfit member would be an extra load on the Pack Rats back while on trek and nothing spoils a desert trip more than an uncongenial trail pardner.

Regular meetings are given over to the discussion of photography and things pertaining to the desert.

There are six photographic competitions held during the year; three



"Thru the Palms"

E. W. Foote

of which are open to any subject and three which must be purely desert. These competitions are judged by one of the honorary members, of which there are four, or by an invited guest of the evening and points are given for first, second and third places as well as two honorable mentions. These points are recorded towards a yearly total for an award.

These awards consist of the Pack Rats cup, a trophy for the best achievement in desert photography for the year and the cup given to the holder of the highest score in the open competitions. These are perpetaul trophies and the name of each winner is engraved upon the base and he is given custody of the cup for the ensuing year.

This year there will be an added competition for a large silver cup



"Bull Wheel"

Fletcher O. Gould

donated by honorary member James S. Lawshe, past president and member of the board of directors of the Los Angeles Camera Club, to be given in competition each year for the best picture of the desert containing one or more figures.

Once a year there is a competition between the Pack Rats and the Riverside Pictorialists, another small group composed of seasoned photographic veterans from Riverside, California. This competition is for the desert trophy and competition is keen between the two clubs as to which one will have the privilege of keeping it each year.

On competition nights the tradition coffee (minus the desert sand) and doughnuts are served. These doughnuts even have special names such as "Lava Caps" for the chocolate coated ones, "Alkalies" for the ones covered with powdered sugar and other similar names.

The members may make as many desert trips as they wish during the year but all are expected to take the annual trek to some selected spot and spend the week end with blankets, flapjacks and of course cameras.

The desert offers these men a varied field for their cameras. From the gently undulating sand dunes, wind etched and rippled to the gigantic Joshua and Sahuaro, from the etherial grandeur of the sunsets to the stark realization of the drama to be found in the bits of mining equipment or wagons abandoned to the elements and strewn over many miles of the



"Desert Solitude"

R. Owen Shrader

arid waste, mute evidence of the struggle of those hardy pioneers, the prospectors and the homesteaders, who at various times have striven to wrest the riches from this land.

Here a group of native palms will rise above a small spring to be photographed against the snow capped mountains or maybe the picture will be a remnant of the past as the old bull wheel, abandoned, standing staunch against the sky with the wood grain deeply etched by wind and sand, majestically awaiting eventual disintegration, and vividly portraying the drama of mans conquests, failures and successes against this terrible and beautiful land.

Truly the Pack Rats have an incentive behind their work for I know of no land that gets under your skin as does these desert lands of ours and to portray its moods and to capture, by photography, its spirit is really an ambition worth striving for.

There is one social event of the year, the annual banquet to which the ladies are invited. This is the occasion of the presentation of the awards and of the sweepstakes prize, a medal for the best picture of the year selected from all the prints which have won places in the year's six competitions. The selection being made by the honorary members sitting as a jury of award.

Woe betide the member who has incurred special notice for some so called indiscretion or for lack of interest for he receives the title of "Wharf Rat", which I am told is supposed to be the lowest form of



"Crown of the Desert"

William Hart

rat, and is presented with a small model of a wharf which is also a perpetual trophy on which his name has been inscribed.

Last year this award was won (?) by a member whose interest had been taken temporarily from his photography by another hobby. This year it was given for "mutilating the desert" for one member seemingly always picks a view point from which it is necessary to chop brush or bushes from in front of his camera but for all this levity there is a true sincerity and a bond of true comradeship.

In many communities throughout the country there are many people interested in photography whose isolation from a city that maintains a Camera Club has been a drawback to them in as much as they do not have the congenial fellowship of others interested in the same field. Oftimes these people do not realize that a very small group interested in the same thing can be organized for the benefit of all and that in their own vicinity there are perhaps a few others who if contacted would be glad to meet now and then for the mutual benefit of all. Why not look around and find these others, organize a small group and let the Pack Rats Club serve as a model, for here are eleven men whose business lives are varied, banks, cement companies, real estate, photo finishing, sporting goods, laundry, electric company, police identification bureau and sundry other lines who are banded together in their sincere efforts to photographically record the "Spirit of the Desert" and they are, in desert colloquial, "doing a durned good job of it".

A New Approach To Fine Grain

Harry Champlin

THE chemistry of development of the latent image is just about ten years behind the times. In all other branches but this one photography has made tremendous advances.

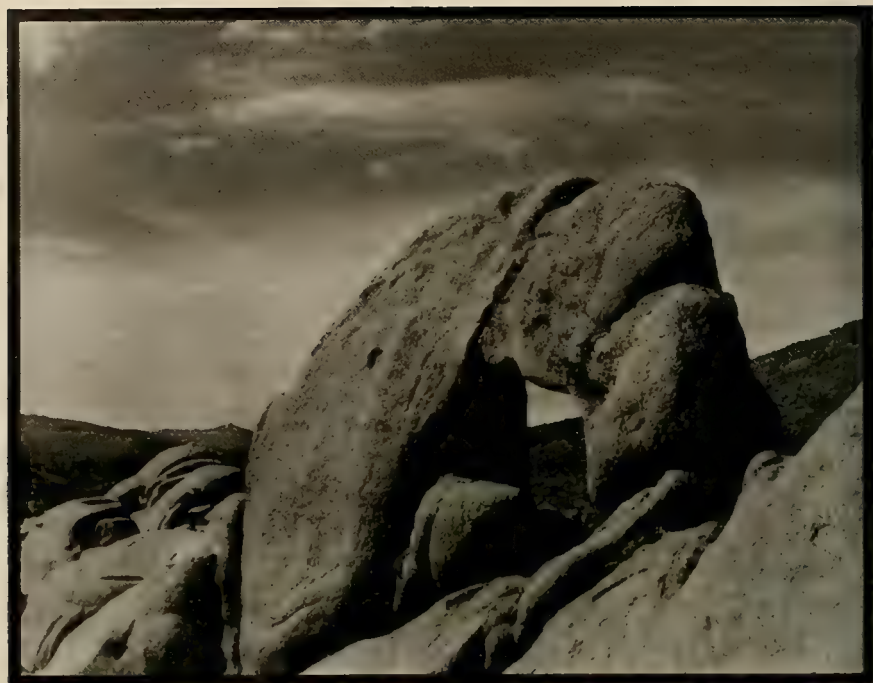
The advent of the miniature camera placed great demands upon scientists the world over. New lenses of extreme aperture and exquisite definition were calculated. Chemists found new dyes and new methods of sensitizing and increased film speed to hyper-rapid ratings. Camera manufacturers kept pace with the new cycle by producing entirely new types of minute precision instruments capable of utilizing all this speed.

With all this precision, this optical excellence, and these ultra rapid emulsions at our command we are not much better off than we were some years ago. We are still held back by the chemistry of development. We are told that we must give at least twice normal exposure whenever little cameras are used. All normally exposed negatives will be either hopelessly lacking in shadow detail or so coarse grained as to be practically worthless. The chemists go round and round and end up by giving us a slight variation of the same formulas, with the same chemicals, and the same results.

In spite of what these learned chemists tell us we can actually load our miniature cameras with a film such as Eastman Super X, set the meter at 40 or 50 Weston (Scheiner 25-26), expose accordingly and utilize all the speed science has built into the outfit, and have negatives that are perfectly timed, with a wealth of shadow detail and perfect density—all this in addition to a grain size finer than the average fine grain developing formula will give. It is not necessary to use films slower than Super X, Agfa Superpan, or Dupont Superior, except for copying and other types of commercial process work.

Now, then, there is no mystery, no hokum to these claims.

In miniature negative making, success depends upon the size and shape of the holes in between the grains as well as the size of the grains. One is just as important as the other. There is no advantage in a developing formula that shaves the silver grains until they are exceedingly fine if this same formula allows the spaces in between the grains to become large and irregular. It is these spaces that pass the light recorded by the enlarging paper and determine whether or not the negative is fine grained. Hence, some developing formulas will give negatives with a larger actual grain size, and yet these same negatives will make larger and finer grained



"Rock Forms"

Tom J. Hopkins

Contax; Sonnar F:2, 50 mm.; Agfa Superpan in Champlin #7; 1/100 sec., at F:5.6, with Zeiss Yellow-Green filter, at 9 A.M.; cut showing about 5.5x enlargement was made from an 11x enlargement.

projection prints because the grains are so evenly spaced and so regular in size. The proof of the grain of any negative is in the print.

There is a decided disadvantage in any formula requiring more than a normal exposure. Whenever more than a normal exposure is given there will be a definite loss of quality in the highlights and throughout the whole tonal range. This lack of quality is very real and is a distinct disadvantage because it eliminates that certain pearly lustre which is a feature of a good print from a perfectly exposed and developed negative. This lack of tonal quality is noticeable in so many miniature camera prints. The negatives were purposely overexposed and development was curtailed to prevent any clumping of the silver grains. This is the usual procedure in fine grain developing and it is a mistake. Extreme fineness of grain and contrast papers will never give the sparkle and brilliance of correct exposure and development. Mr. William Mortensen's work is a perfect example of the results of correct minimum exposures and full development.

Much has been written about fine grain developers, and there is a strange similarity to all of the formulas offered to the miniature camera division of the photographing public. All of the formulas are variations of combinations of chemicals known and used for at least ten years.

The purchase of a Leica in 1925 created for me an interest in fine grain developers. First there were dilute solutions of Glycin and then Glycin-Pyro. There followed then a series of developing solutions con-



"Harbor Scene"

Harry Champlin

Contax; Triotar F:4, 85 mm.; Agfa Superpan in Champlin #7; 1/100 sec. at F:16, with 1.8x yellow-green filter; cut showing about 7.5x enlargement was made from a 15x enlargement.

taining everything conceivable from sugar to mercury-cyanide. Some of these solutions gave finer grained negatives than those in general use today. Experiments with dyes led to paraphenylenediamine and a developer using this chemical in combination with glycin was compounded in 1926, long before paraphenylenediamine came into general use.

Paraphenylenediamine-glycin is the outstanding fine grain developer in use today. There are, however, certain faults with the majority of formulas calling for these two chemicals.

Shadow detail is the criterion of film speed and if shadow detail is lacking the film should be exposed longer. If the exposure necessary to secure correct shadow detail is longer than called for by a properly used photometer set at the correct film speed rating, then we can say the developer is at fault. Paraphenylenediamine-glycin requires more than a normal exposure. Prolonged development will not cure this fault; it will only increase the contrast. So many miniature negatives show this excess contrast, and the prints from them have a very short tonal range.

Paraphenylenediamine-glycin is very unstable and there is a considerable difference in the quality of each successive film developed in one solution. This difference in quality cannot be accurately measured because so much depends upon the amount of silver dissolved into the solution during the process of development. One roll will be vigorous and the next soft and thin and unprintable.



Fig. 1.6x enlargement cut and original same size. 1/125 sec. at F:9, DuPont Superior developed for 20 min. in D-76. Exposure by Weston meter with film rated at Weston 32.

The addition of metol is of doubted value. The average paraphenylenediamine-glycin developer contains about 100 grams per litre of sodium sulphite. A developer can be compounded of 100 grams of sodium sulphite and either one, two or three grams of metol per litre. The results will be very much like that given by an average borax developer. The grains will be shaved to a comparatively small size and the spaces in between will be large and irregular. There will be some increase in shadow detail when metol is added to a paraphenylenediamine-glycin combination, and a decided increase in grain size. Exposures will be a little more than normal and the stability of the combination will be not much better than a solution containing no metol. The shadow speed of the developer will cease quite some time before the metol is entirely exhausted and this is one of the truly bad features of the combination, and accounts for so many lifeless, contrasty miniature negatives.

The addition of amidol to the developer will show a great increase in film speed, and the life of the solution will be very short. However, it is possible to calculate the actual number of square inches of film a given quantity of paraphenylenediamine-glycin-amidol will safely develop in its short life. There will be an increase in grain size, depending upon the amount of amidol added.

Film speed can be increased by decreasing the sodium sulphite content of a paraphenylenediamine-glycin developer to one-half the amount usually recommended. The average formula calls for from 90 to 100 grams of sodium sulphite per litre. This should be decreased to approximately 45 grams per litre.

The addition of an acid to the developer will also give more shadow



Fig. 2. 6x enlargement cut and original same size. 1/125 sec. at F:11, DuPont Superior developed for 19½ min. in Champlin #7. Subsequent to making exposure for Fig. 1, a series of exposures were made varying the exposure by one-half stop. These were developed in Champlin #7 as above and the one which matched negative of Fig. 1 in density and shadow detail selected. The exposure data for Figures 1 and 2 therefore show the comparative speeds of the two developers, and the illustrations show the shadow detail obtainable.

detail. Six years ago I started experimenting with acid additions and proved conclusively that speed and fine grain could be combined in one developer. The addition of two grams per litre of sodium bisulphite showed some improvement and larger quantities reduced the contrast and allowed prolonged development to bring out shadow detail. This was one method of increasing film speed. The stability of the solution was, however, a very serious matter.

The addition of acids with a strong preserving action solved many problems and paved the way to fine grain and high film speed. For example, acid salicylic proved to be an excellent preservative and at the same time gave a marked increase to the shadow speed of the developer. The developer was so energized that it had to be diluted with about ten parts of water.

The one disadvantage was the softening effect of the acid salicylic upon the gelatine whenever the temperature was raised above 70° fahrenheit. Other acids and compounds gave somewhat the same preserving action without harming the gelatine. Acid lactic and resorcin were excellent preservatives but they did not show much increase in film speed.

The temperature of a paraphenylenediamine-glycin developer is a very serious matter. The developer loses activity under 68° fahrenheit and at 62° fahrenheit almost ceases to function. The finest results are obtained when the temperature is raised to about 74° fahrenheit. At this temperature everything in the developer is exerting a maximum energy.

A softening of the gelatine at these high temperatures would be



Fig. 3. 26x enlargement from Fig. 1. (Developed in D-76) cut and original same size.

ruinous and it became necessary to add a hardener to the developer. Now, then, when hardeners are mentioned the average photographic chemist's mind seems to travel straight to one of the alums, or to formalin. A far better plan would be to keep right within the benzene ring. Acid salicylic and resorcin are members of this family and the developing agents themselves are derived from this same group. Acid benzoic is an excellent paraphenylenediamine-glycin preservative and at the same time it exercises a tremendous hardening effect upon the film. This hardening effect seems to increase as the temperature is raised. The softening effect of acid salicylic can be balanced with acid benzoic and negatives developed at temperatures as high as 80° fahrenheit will be tough enough to withstand much abuse. This toughness is different from the brittleness of gelatine hardened with formalin; negatives are perfectly pliable and yet much more scratch-proof.

With all of these preservatives in the developer we can add either metol or amidol in small quantities and increase shadow speed slightly without noticeably effecting grain size.

The addition of a buffer will create a harmonious balance. The buffer generally used is acid boric and this chemical acts splendidly. The P H

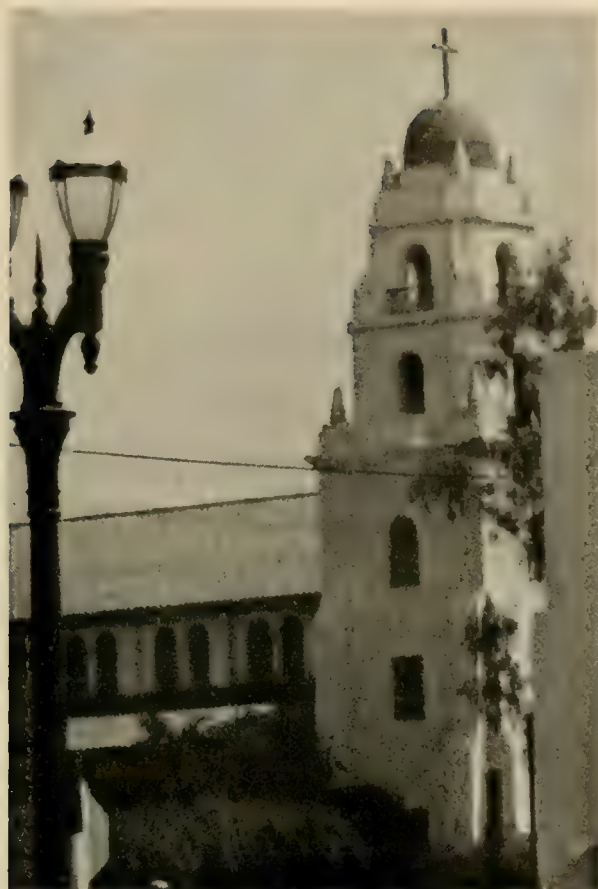


Fig. 4. 26x
enlargement from
Fig. 2. (Developed
in Champlin #7)
Cut and original
same size.

is approximately 7.15 as used.

A formula compounded with these chemicals will actually give perfect density with full shadow and highlight detail, a long tonal scale, and very fine grained projection prints—all this with from one-half to one full stop less than the normal exposure. The following formula has been highly successful.

(Champlin-Press No. 7)

Water (125° fahrenheit).....	20 ounces	1000 ccs.
Metol	25 grains	2.5 grams
Sodium Sulphite	1 ounce	45 grams
*Acid Benzoic	9 grains	1 gram
*Acid Salicylic	4 grains	0.5 gram
*Acid Boric	25 grains	2.5 grams
Glycin	¼ ounce	11.5 grams
**Paraphenylenediamine	¼ ounce	11.5 grams

*Use pure chemicals such as MCW analytical reagents.

**Use only the pure base—not the hydrochloride.

Dissolve the chemicals in the order given and use at 70° fahrenheit without dilution. After three rolls have been developed increase the temperature to 73° fahrenheit. The quantities given above are sufficient for eight six foot strips of 35 mm film or a like amount of roll film.

Develop Eastman Super X and Dupont Superior 19½ minutes, Agfa



"Stepping Aboard"

Henry Champlin

Contax; Sonnar F:2, 50 mm.; E.K. Super X in Champlin #7; 1/250 sec. at F:8; cut showing about 6x enlargement was made from a 12x enlargement.

Superpan 16 minutes, and Eastman Panatomic 13 minutes. The first roll developed will have a little more grain than subsequent rolls; however, the grain size will be less than one-half that of a negative developed in a metol-hydroquinone-borax developer.

Should anyone doubt the speed and fine grain qualities of the above formula let him mix it up and develop a roll of film. The results will justify the claims made and will prove that it is not necessary to increase exposures when using miniature films.

This formula is a step in a different direction and is by no means the ultimate in fine grain developers. In fact, experiments are now being conducted with a developing combination for negatives that have received two full stops less than the normal exposure. The results of these experiments will appear in a future issue of **CAMERA CRAFT**.

My sincere thanks are extended to Dr. J. P. Sampson for his aid in solving some of the complex chemical problems, and to Arkell Burnap for his exposure trials and frank opinions during the progress of these experiments.

Paraphenylenediamine will stain; however, it is not as toxic as is generally reported. In fact it is no more so than metol or hydroquinone. If you handle metol with your bare hands, or hydroquinone, or a great many other photographic chemicals, you may find that these chemicals will effect your skin. One is just as bad as another if you are subject to this type of poisoning.

Pictorialism

For Beginners

Harold G. Grainger, A.R.P.S.

Part V: Lighting

WHEN drawing up a list of the things which should be heeded by those about to essay the making of their first pictures with the aid of a camera, lighting, i. e. the direction from which the subject is illuminated (principally the sun) demands early mention. It is no overstatement that sometimes this one thing makes or mars many an otherwise good subject, and as one has always to remember that photographers are limited to the employment of monochrome values (apart, of course, from efforts in color photography on a paper base which necessarily involve the expenditure of a great amount of labor and time for their production by those possessing exceptional ability) for the expression of their ideas in pictorialism, every possible means should be taken to exploit by the exercise of control or other means, such natural advantages as are available to them.

Now one of the best, though perhaps not always to beginners in picture-making the most obvious directions in which control can, to a large extent, be exercised (in addition to selection of view-point and camera height already dealt with in a previous article in this series) is choice of lighting, which has always been regarded by artistic folk as of more than usual importance, ranking indeed amongst fundamentals.

Careful examination from different view-points of a subject of which one proposes to make a camera record proves how important a part in pictorial rendering is lighting. We find so many possibilities, some good, some indifferent, according to the angle of illumination. By practice, we in time appreciate the value, pictorially, of a play of light here and, conversely, shadows there; realize the importance of cast shadows, how they fall and where; especially those upon the ground, for they are so useful—I had almost written necessary—in the arrangement and building up of a composition, by supplying in many instances the stability and support not otherwise present.



Print A



Print B

Of all possible lightings those least interesting and most certainly the least useful to pictorialists, because the results as a rule are "flat" and lack telling shadows, are where the subject is illuminated from a position more or less behind the camera. On the other hand, those generally referred to as "facing the light", or anything approaching this kind of illumination; and, indeed, any angle other than that opposite the viewpoint are always well worth attention because of the possibilities they offer of pleasing effects.

I think the companion prints of a dovecot—quite a simple subject—on the lawn of a semi-natural garden, from practically the same viewpoint will confirm these statements. "A" was taken about eleven in the morning with the sun shining almost full on the subject; "B" about eight hours later when the sun, in addition to being much more to the left was, at seven in the evening, lower in the sky. It is worth noting in print "A" that apart from the almost entire absence of satisfactory relief between the foreground flowers at the base of the dovecot and the trees beyond, there is nothing with the exception of the supporting post of the erection to give any feeling of stability or firmness to the composition; nothing in the nature of interest or mass of tone to provide a base or foundation to the composition.



Print C



Print D



"Morning Mist"

Harold G. Grainger, A.R.P.S.

Print E

Turning to print "B" it will be observed, first of all, that whilst the already declining sun illumines, in a delightful manner, the grouped flowers, the long shadows they cast as also those by the trees out of sight on the left provide the stability and base to the picture which, so necessary to success in all picture-making, are so noticeably absent in print "A". In addition, the massed tones of the background trees, now in shadow, provide an admirable setting to the dovecot and its base of flowers.

The accompanying couple of hay harvest incidents in an orchard likewise emphasize the truth of the points on lighting just brought forward. Note how in "C", a direct "facing the light" rendering, the artistic quality is immeasurably superior to its much more ordinary "flat-illuminated" companion because, in addition to the delightfully restful background of shadowed trees, the foreground shadows of the apple tree in front of the wagon, reaching out, as it were, towards the lower margin of the print, create much more interest in the foreground and incidentally provide a good base or support to the composition. Similarly, the pony, all in shadow excepting the splash of sunlight outlining it in so charming a manner against its woodland setting, is not only far finer as a study in tones than in the other print, but also conveys the impression of having a firmer association with the ground.

Coupled with the lighting problem as simply expressed by the angle of incidence, i. e. the direction from which the sun illumines the subject, is the great difference observable between, for example, a rendering of a subject taken before the warmth of the sun has dispersed the early morning mist and, from the same or near camera position, one taken later in the day. In the first named (as also in many subjects taken in the evening) a better sense of atmosphere, a more pronounced difference in the render-



Print F



Print G

ings of the tones of the different planes of the subject, according as they are nearer to, or further from, the camera, is evident.

As already indicated in a previous article in this series, it is a good thing to remember that, other things being equal, tones generally should be strongest in the foreground and gradually diminish in strength until, in the distance, they are very delicate. The attainment of this atmospheric quality, which can be assured by the employment of good technique in conjunction with intelligent choice of lighting, should, because its presence is such an asset in picture-making, be the aim of the would-be camera-artist.

Some of the most delightful effects in which atmosphere plays an important part are seen, very early in the morning in the country and the river scene, "Morning Mist", taken just as the sun rose on a misty world, gives some idea of the beauty of this intangible quality in its simplest form. Note how, from the branches in the foreground showing subdued leaf detail, each plane behind, each group of trees, is rendered in tones more and more delicate (without visible detail) until the most distant are only a little stronger than the sky.

In cities, too, this rarely beautiful evanescent quality can be captured to advantage pictorially, as is illustrated by the two prints of a well-known corner of York, England, redolent with the memories of almost twenty centuries of human endeavor. Note how in "F", taken at about 9:30 a.m., there is a distinct and delightful recession of tones. Commencing with the strong foreground shadows of Etty's statue these gradually diminish in strength via the Norman-Plantagenet military gateway erected on the Roman watch tower of earlier days until, as the pearly delicacy of the West towers of the famous Minster are reached, there is the feeling that the edifice does, in truth, stand well back from the Square in which the statue is situated.

If print "G" be now examined (this was taken about 1 1/4 hours later when, with a more active sun, the mist had been dissipated) it will be evident that the differentiation of planes which is so pleasing a feature of print "F" is so far lacking that the tones of the various buildings from



Print H



Print I

the gateway to the Minster towers are in such confusion as to make it almost impossible for the observer to separate them from each other.

That sunshine may vitalize, and even make positively beautiful, a subject ordinarily so dull and commonplace as hardly likely to attract attention is proved by the companion illustrations of a vista of a cathedral church taken within two minutes of each other. See how in "H" the transient splash of sunshine which, when noticed, demanded quick decision and action to secure, has not only transformed and enlivened the whole scene by lighting up in so remarkable a manner commonplace material, but has provided emphasis just where most desirable.

Apart from the pictorial value of the enrichment conferred on the shadowed portion of the subject, its formation provides a "line" which leads the observer into the picture space and effectively links up therewith the cathedral with the rest of the composition. Whilst the light on the foreground foliage stands out as the paramount improvement in this picture, the incidence of the sunshine was a particularly fortunate circumstance generally, for it has infused a sparkle throughout the whole rendering; even the tree trunks, now in greater relief against the sun-illuminated bank on the right, and the sun-flecked flower bed at the base, contribute their quota to the great all-over betterment.

My final selection of illustrations for this article on lighting gives me opportunity to demonstrate, in architectural work especially, where a firm base or foundation is more than usually essential, the value, in picture-making, of attention to the advantageous distribution of masses of dark or light tones for the promotion of unity, without which pictures lack the necessary stability.

Though in these two views of a newly-erected city hall the angle of illumination is almost the same, each in fact displaying strong lights on exactly the same portions of the building, it is notable that "J" is substantially the superior of "K" because of the spreading across the road, a little later in the day, of cast shadows from invisible buildings on the left. These, linked up with the shadowed property on the left provide, by their



Print J



Print K

massed combination, a wedge of dark tone which materially strengthens the composition and gives to the print the firm basic foundation the companion rendering so obviously requires. The inferiority of "K" is largely due, in fact, to the isolation of its masses of dark tones—the shadowed property on the left, the small sitting figure in the foreground, and the twin towers and roof of the hall.

In county and town, as also at the seaside it will, I think, be accepted that an early morning sun as well as the declining sun of evening furnish a greater percentage of opportunities for pictures embodying artistic feeling than at any other part of the day. At any rate much more skill is required to infuse into a monochrome rendering of a subject illuminated by, say, a brilliant afternoon sun, the quality known as aerial perspective; that is such a recession of tones that varying distances are suggested with success—than is necessitated by a corresponding subject taken in the early part of the day.

I am, of course, considering just now average subjects such as landscapes, river and street scenes, etc., not the pictures made by the employment of (at times) extraordinary view-points and angles, of unusual animate and inanimate things, by those who rightly consider themselves advanced and are ever alert to novel methods of self-expression. Success in modern types of work is more likely to come to those who, by experience, have acquired an appreciable understanding of art principles which they can apply to advantage in this newer kind of pictorialism.

That the possession of natural artistic ability, particularly when practiced with knowledge of the principles laid down by successive generations of those who have devoted their lives to art gives a big pull to those who have cultivated inherent talent is undeniable. When, in addition, these advantages are reinforced by manipulative skill there is no limit to the possibilities open to such camera users. It is not by any means an unusual experience in the province of art that many people have found that they entertained unawares latent faculties, dormant only because, maybe, there had hitherto been no opportunity for the expression of their real selves.

Practical Miniature Camera Photography

H. Crowell Pepper

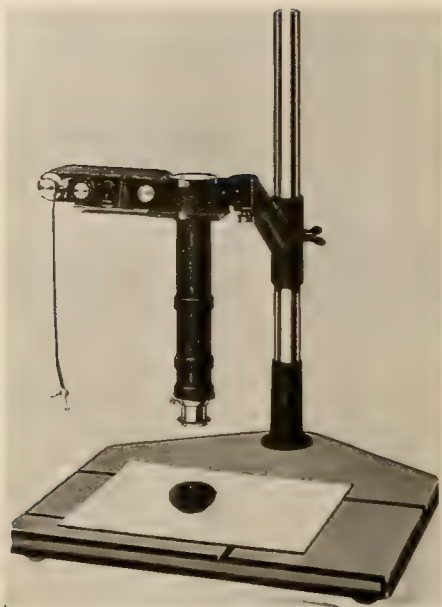
Part II: Equipment

(Continued from July, 1936)

Equipment for Macro Photography. There are times when we want or are called upon for large pictures of very small objects both animate and inanimate. Let me illustrate. You seek a picture of a Japanese Beetle lunching upon a rose to illustrate an article upon Insecticides.

our short focus lens is ideal but alas your little camera has no provision for a long bellows absolutely necessary in such work. This may be overcome by the use of extension tubes, the use of Proxars or the use of a close up optical device such as the Zeiss Contameter. The tubes need little comment. They are simply a series of metal cylinders each of a definite length which screw one into the other. They are fitted to the camera and the lens is fitted to the outer end. The result is the same as a bellows. A set of tables give the distance from lens to object and the resulting magnification. Often a Proxar lens is used in conjunction with the regular lens to give additional magnification. For indoor work they are very valuable. For nature work such as the example given above there is nothing quite so valuable as the Contameter.

The contameter consists of interchangeable prisms by means of which a special distance meter is brought into focus at a distance corresponding with the supplementary lens used. In other words there is a special range finder attached to the top of the Contax Camera. Three Proxars and three special corresponding eye-pieces are supplied. With the proper eye-piece fitted to the finder and the corresponding Proxar attached to the lens, previously set at focus infinity, you look into the range finder and walk towards the object until two images appearing therein come into register. The shutter is released and a sharp image secured. Provision is made for parallax. The range of distances is 20", 13" and 8". From this meagre description you can readily see the ad-



Extension Tubes in Use.



Large Copying Stand

vantages of such an instrument where you are attempting to photograph animate objects. It is being used by professional men for records of eyes, teeth, skin diseases and operations.

Special Equipment for Copying, etc. There will undoubtedly be some readers of this series interested in copying small manuscripts, prints, portions of newspapers and innumerable other objects also in the photography of small articles of various kinds. To aid these I have felt it important to include some illustrations of special equipment designed especially for this purpose. The large copying stand offered by Carl Zeiss permits the photographing of flat originals and small objects on scales of reduction ranging from 1:2 to 1:14. It consists of a base, a column and an arm. The latter holds the camera and lens and is provided with movable sleeve giving different distances from emulsion to lens. Focusing may be done with a ground-glass and magnifier or by the use of a steel tape and a set of tables. Lights are also furnished which make the outfit complete in every detail.

Carl Zeiss also furnish a special copying stand, complete in itself, and readily transportable. The apparatus is provided with setting notches for semi-automatic focussing over the range of degrees of reduction, viz: 1:4, 1:3, 1:2, 1:1½ and 1:1. Focussing may also be done with a ground glass and magnifier. Focussing changes are accomplished by special metal rings and no supplementary lenses are required. Special metal masks are supplied for each degree of reduction. This is one of the most convenient pieces of apparatus I have ever seen. It may readily be taken into a library and used to copy manuscripts or illuminated documents.



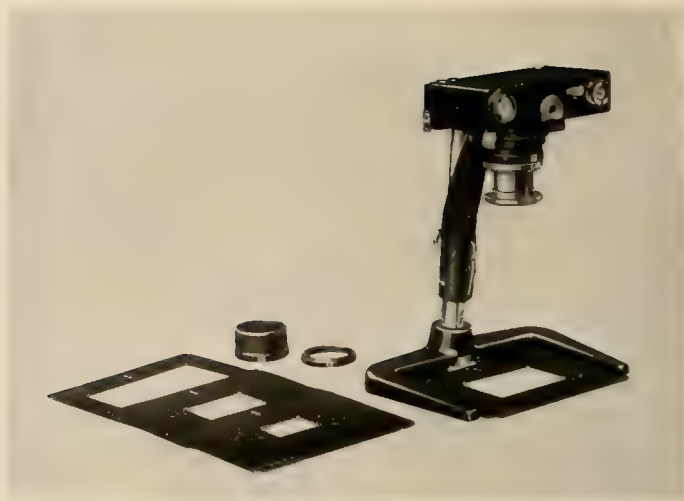
Contameter in Case

E. Leitz, Inc. also furnish special equipment for use with the Leica. In addition to a large copying device similar to the Zeiss, they also supply a Sliding Focusing Copy Attachment which is ingenious. A plate is permanently attached to an arm. Another plate holding the camera as well as the ground-glass slides across the fixed plate which holds the extension tubes and lens. In use the desired number of extension tubes are attached to the fixed plate and the lens is fitted. The sliding plate is placed in position where the ground-glass is over the tubes and lens. The arm is raised or lowered for coarse focusing and final focusing is done with the focusing mount of the lens. When ready to make the exposure the ground-glass is slid out of position which brings the Leica Camera into proper position. A set of tables give the reduction or magnification for various tube extensions.

There are three additional reproduction devices furnished, also a Rotating Copy attachment and a very special copying attachment equipped with a long draw bellows. This equipment is so complete there seems nothing further could be added irrespective of the type of matter to be photographed.

The Graflex Corporation furnish somewhat similar equipment to be used with the New National Graflex. The makers of the Exacta also supply special equipment for use with that camera.

Equipment for Single Exposures. One objection many serious workers have expressed against the miniature camera related to the inability to secure individual exposures. To the average worker this is not an objection but when one applies his precision miniature camera to really serious work, especially in certain reproduction work, advertising photography, photomicrography and scientific photography, there is a decided advantage in being able to make individual test exposures. As an illustration, let us assume that you have been requested to make a series



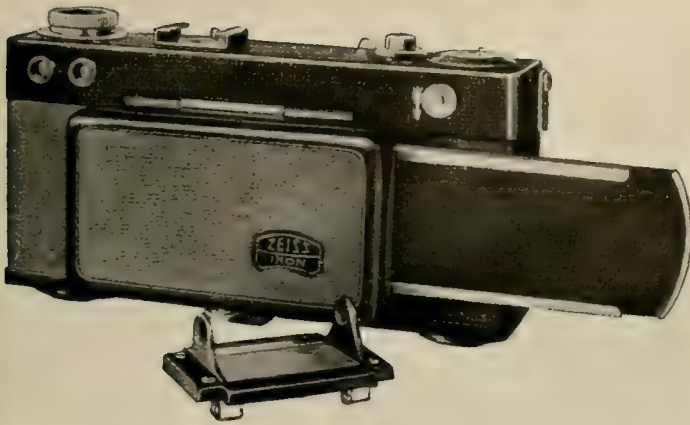
Reproduction Stand

of photomicrographs of the transverse section of a tree root. One negative will not show everything. It becomes necessary to try various exposures using various filters to show cell structure and cell content, and this is true for each magnification. Even great familiarity with your equipment will not always enable you to accurately determine the correct exposure. In practice I make individual exposures for each "set up" and develop them before proceeding.

To supply this need Carl Zeiss offers for use with the Contax and the Super Nettle a special plate back fitted with individual holders taking either small plates or cut films. The regular film back of the camera is removed and the plate back attached. Focusing may be done with a special ground glass. This back is sturdy and beautifully built and it is impossible to scratch the emulsion. I generally use cut films, each 9cm x 12cm film cutting, without waste, into eight little films. These I develop in a tank using the Eastman Kodak Company's Dental X-ray Film developing rack.

Unfortunately the Leica is not constructed at present to take a separate back. The manufacturer furnishes a metal sheath which holds an individual film and this is dropped into the camera in the dark room. They do furnish, however, a single exposure Leica consisting of a small housing to which the Leica lens may be attached and to the rear of which may be fitted individual film holders.

Projection Printers. We have covered in some detail most of the important pieces of special equipment furnished for the miniature camera. There remains for consideration only the projection printer or enlarger. While not per se a piece of camera equipment it is of vital importance to the successful practice of miniature camera photography. The miniature negative, except for certain specialized work, is of little use



Contax With Plate Adapter

unless we can produce a fair sized print. To do this we should own a good projection printer.

Before considering some now offered we should consider some of the important features of a good printer. Much depends upon the size enlargements you intend making. We should, if we intend to make larger than 11" x 14" prints, be sure that the standard is sufficiently long to give the required "throw". These printers may be divided into two main classes: (a) Automatic focussing, wherein the distance from easel to lens and lens to negative are automatically regulated, the image always being in sharp focus and (b) those requiring a rough focusing with the printer and more accurate focusing with the lens. The latter are more generally used. The former while fine instruments are expensive and are limited as to the size of print obtainable. Most of the printers used for miniature camera work are vertical, i.e. they project the image down upon the paper. Of course there are horizontal printers but they are not as satisfactory as the vertical. A further classification may be made by distinguishing those using condensers from the non-condenser type. There is much controversy as to the relative merits of these two types. The condenser type gives slightly more contrast but every blemish and every grain-clump is clearly shown. The non-condenser type gives a more diffused and slightly flatter print and is somewhat slower in printing. Both are good and you pay your money and make your choice without going far astray. My preference is for the condenser type.

A good printer should possess freely moving parts, i.e. the housing should move smoothly and freely up and down the standard and the lens adjustment for focusing should be accessible and smooth working. Some provision should be incorporated for adjusting the position of the lamp so that an even circle of illumination may be had. The condensers

should be approximately the same focus as the projection lens used. A holder for the negative should permit the transfer from one to another easily and without scratching and when the negatives are retained in strips or rolls there should be a holder upon each side of the "gate" to hold the film. The negative holder should keep the negative flat. Two general methods are in use, one in which the condenser is brought down into contact with negative, flattening it and the other where the negative is sandwiched between two pieces of fine quality glass. Both have their good and bad points. The glass "pack" tends to collect dust and finger-prints but permits of some air space between the negative and the lamp. The other offers possibilities of scratching the condenser and the heat from the condenser is directly in contact with the negative. Since there is no really ideal projection printer on the market we shall have to be content with what we have offered. Every printer should have a well ventilated lamp housing so that the heat may be dissipated and as little as possible strike the negative. There is no printer which permits a tilting of the negative in the plane of the negative and a tilting of the easel to overcome distortion or to create distortion where certain effects are desired.

Most of the printers are supplied with sufficient light for a properly exposed and developed negative. To take care of dense negatives photoflood bulbs may be used with a rheostat. The latter permits the focusing with a small amount of light and the exposure with the full power of the lamp. Point lighting is not advisable since the use of lamps with concentrated filaments with condensers tend to bring out the graininess of the negative. I have seen such a lighting combination where it was impossible to secure a good 8" x 10" print from a physically developed negative. We need a certain amount of diffusion in our light to produce the best results.

Further I wish to point out that the best results cannot be obtained when a large condenser enlarger is used with small film. If your enlarger or printer is provided with six inch condensers your projection lens should be approximately of six inches focus. Often such a printer is used and when it is found the regular lens will not give sufficiently large prints a short focus lens e.g. two or three inches focus, is fitted. The condensers and lenses are not suited to each other with regard to focus and the results are not the best.

The Magniphot is offered by Carl Zeiss for negatives 24mm x 36mm and 3cm x 4cm. It will make enlargements of $2\frac{1}{2}$ x $3\frac{1}{2}$ to 15" x 10". Larger prints may be secured by swinging the housing to point over the edge of a table to the floor. The column or standard is heavy and of exceptional length. It may be purchased without a lens, using the Contax lens or with a special enlarging anastigmat. It is not very expensive and will give complete satisfaction. For larger size negatives this company furnishes two styles of Miraphot enlargers with automatic focusing.

E. Leitz, Inc. supplies two very good enlargers for 24mm x 36mm and 3cm x 4cm negatives under the trade names Valoy and Focamat. The former is supplied with different length standards and the Leica lens is used. One condenser is furnished but a second condenser may be



Valoy



Focomat

used in conjunction therewith. The Focomat is an automatic focusing printer of real merit. It is limited in the number of diameters of enlargement but has found great favor among those desiring prints 11" x 14" and under. A large size Focomat is supplied to those desiring automatic focusing who possess cameras making negatives up to 6.5cm x 9cm. With 95mm lenses it will give automatically focused prints from 1.8x to 6x and with a 50mm lens from 2x to 13x and by special hand adjustment larger sizes. There is also the Vanos enlarger which is somewhat similar to the large Focomat but is not automatic in focusing.

The Zeiss Magniphot and the Leitz instruments keep the film negative flat by bringing the condenser in contact with the negative.

Burleigh Brooks distributes the Bee Bee precision and several other enlargers of real worth. The Eastman Kodak Company supplies a good enlarger for miniature negatives, equipped with a rheostat and photo-flood bulb as well as a heat resisting glass to protect the negative. There are several more fine enlargers available among which may be mentioned the new Enlarg-or-Printer manufactured by the Graflex Corporation. Your dealer will be happy to supply you with descriptive literature of all or any one in which you may be interested.

In the next two issues Mr. Pepper will discuss miniature camera lenses.—Ed.

Cinema Section

Edited by

William A. Palmer

Pipe Stem Cleaner Cartoons

THE problem of making movies during social contacts when friends get together is a difficult one. Unless the group consists entirely of movie minded persons, it is practically impossible to shoot anything other than the usually superfluous shots of giggling people cutting up before the camera. Ordinarily the participation of non-movie producing minds is best kept for the projection end of the game. Yet if these same people can be kept interested enough to bear with the harassed photographer as he tries to work out a film plan with his mind absorbed in cine technicalities, they will anticipate eagerly the showing of the film that they have seen taken. How to make movies in which these people have had a part without having the job become a bore and the photographer a pest is a question.

An idea that will furnish at least two good evenings entertainment for a group and several additional evenings of interesting work for the photographer is the shooting of an animated "cartoon". The production of an actual subject with drawn cartoons is of course too intricate for the usual movie maker, but the making of a film, in which animated figures like flexible jointed dolls are used, is very feasible. The idea which we wish to explain is one in which the friends make the figures which they are told will be made into a "cartoon" comedy. The photographer does the actual frame by frame shooting of the picture using prepared figures at his leisure during the week or so following the actor-making session, and then the friends are invited to a gala showing of the picture in which their characters appear.

This sounds fantastic at first thought but it can be worked successfully. The figures which can be funny little men or animals of various kinds are made from very simple materials and can be made successfully by anyone, whether they have ever done anything like it before or not. Provide a quantity of pipe stem cleaners, some chewing gum, and a few corks some evening when you are entertaining a group of friends who know how to enjoy a silly pastime. Assign to each person a type of animal or other creature to make, explaining that you want characters which you will later bring to life as a rival to Mickey Mouse. Have a sample which



Typical Figures

you have made at an earlier date to give them an idea of how to go about it. (See the figures illustrated here). The pipe stem cleaners furnish the skeletons and in some cases the whole figure. Hands, heads and other parts can be made of wads of chewing gum or corks. The very act of the character-makers chewing the gum and then sculpturing it into the required shapes is good undignified entertainment. For those who have not had much experience handling chewing gum, let it be known that you must keep the fingers moist or you'll get stuck.

It may be advisable for a simple story like a nursery rhyme or a fairy tale to be chosen and the characters made accordingly. Or it is quite all right to let the workers use their own imaginations and invent their own type of animal such as has never been seen before.

The actual construction of the pipe stem creatures is very simple, the best procedure being to start with the vertebral column, then attach the arms and legs by wrapping the cleaner wire once or twice around the spine. Then the body and head can be filled out by wrapping with more lengths of the wire. Care should be taken that the arms, legs, etc. be fixed strongly to the body so that they will not come off after they are bent around in the animating process. The cleaner wire may be cut by merely bending it back and forth until it breaks or it may be severed with a pair of husky scissors. Features such as eyes, nostrils, and mouths can be put on with pen and ink.

Some of the guests can be put to work with cardboard and glue making the settings for the picture. The best settings are those made by converting ordinary household articles into houses, barns and vehicles for the little creatures.

The animating process is too slow and painstaking to be done while guests are around. It should be left for evening pastime for the photographer while he listens to the radio. The animation photography is simply the process of taking the pictures frame by frame, moving the figures a slight amount between exposures. Any camera can be used for animation, but some are more convenient than others because they have a special trigger which allows but one frame at a time to be run. The Simplex and the Cine Kodak Special are of this type. Regular cameras can be used, however, if one practices a bit with the empty camera, giving the regular starting button a quick depression and immediately releasing it so that the mechanism is only able to advance one frame. While photographing, the camera must be mounted rigidly on a tripod and focussed on the miniature set. In many cases a supplementary lens or portrait attachment may be necessary in order that the camera may be used within two feet of the subjects. Remember also in working at this close distance that the finder is not accurate. The field that the camera lens includes can be found by looking through the finder, but then the camera must be moved so that the subject is properly centered. With a camera that has a finder above the lens, the camera must be tilted up to correct for the parallax. With a camera having a finder to the left of the lens, the camera must be shifted to the left for centering. In most cases the centering is sufficiently accurate if one merely sights along the top and side of the camera.

The "cartoon" is acted out step by step as one moves the figures about. The best motion is obtained by shooting only one frame at a time, changing the position of the figures very slightly for each exposure. This makes the animation very prolonged and most will be just as well satisfied with the rather jerkier animation resulting when two frames are exposed to every move of the figures. This naturally cuts down the time in animation to about half of that required for single frame animation. While photographing the animation it is necessary to keep in mind that 16 exposures are projected per second which, with double frame animation, means that eight moves are made per second. Thus if one wants his little puppet to perform an action in four seconds it is necessary that the motion be done in 32 moves. It seems, just to tell about it, that animation is almost an endless job with the hundreds of moves which must be made just for a short length of film. Actually there are many times in the shooting when five or six frames may be exposed before another move is necessary. If a number of frames are to be shot, they should be exposed one at a time rather than by allowing the camera to run a number of frames and then stopping it. The latter method will lead to unequal exposure, since the exposure on the individual frames when exposed one at a time is just about double that when the camera is up to speed. This point should be kept in mind when figuring the exposure for the animation. On single frame exposures with the speed indicator set at 16 frames per second, the exposure should be set as if the camera were operated at 8 frames per second.

For illuminating the miniature set, two 100 watt bulbs in reflectors are recommended. The 100 watt bulbs are better than photofloods for this purpose because they are long lived and the intense illumination of the photoflood is not necessary since the lights may be placed close to the

subject. The same general principles that obtain for regular interior illumination hold good with the miniatures. The two light sources should be placed at either side of the subject with one source considerably closer than the other so as to give a differentiation between the shadow and high-light side of the subject. Of course, more than two light sources can be used if desired, but the two will be found to serve adequately.

It will probably be necessary for an experimental length of animation film to be made before one finds out just how much to move the characters per picture for different types of action. It is a great help to get a real professional cartoon such as a Mickey Mouse or Felix subject from a film library and study the film frame by frame with a magnifying glass. In that way you will see how the professionals use single frame, double frame, and multiple frame animation.

Pipe stem cleaner creatures are only one type of puppets that can be used for animated subjects. Figures made of modeling clay are excellent to work with as has been shown by that excellent series of subjects called Chip the Wooden Man. These can be rented from 16 mm libraries and can be studied to good advantage. All sorts of dolls and toy animals make excellent subjects, and we recommend enthusiastically that any movie worker with little children make a short reel with his children's play things as subjects. The children will be enchanted to see their beloved playthings brought to life on the screen. Still again an animated subject can be made using chairs and tables as actors, dressing them up in coats and hats and other human finery. The use of chairs and tables that moved by themselves, appeared and disappeared, was one of the first devices used in the trick films of the early producing companies. The old Edison studio in the early 1900's produced a number of comedy subjects in which animation of furniture furnished the entertainment, but these tricks are still as entertaining and mystifying to the lay public and they are an excellent source of material for amateur films.

Color Filming Hints

NOW that Kodachrome filming has become a universal possibility through the introduction of 8mm film, we must study the peculiar characteristics of the film as distinguished from those of ordinary black and white. The fact that Kodachrome has less latitude than ordinary film is already well known. The exposures must be calculated more

carefully and the scenes illuminated more evenly. The oft repeated suggestion that lighting for color must be flat with the source at the back of the cameraman should not be taken too literally, for many of the best effects in color can be obtained with back lighting. It is necessary, however, that the contrast between the highlights and shadows be very much less than for black and white filming. A scene that is back lighted must have the shadow side well illuminated by reflected light and the exposure should be adjusted for the *shadow area*. This means that when using a photo-electric exposure meter, the reading must be taken very close to the object so that the bright back lighting does not strike the sensitive cell of the meter.

It is popularly supposed that successful color filming cannot be done when it is overcast. This is not the case, for excellent results can be obtained on cloudy days. The softness of the diffused light is very pleasant and it is only necessary to take a simple precaution to get satisfactory color rendering. These precautions are the use of filters. Two filters may be used to keep the scenes from appearing too bluish in tint. The first is the regular haze filter which needs no increase in exposure. This gives rather cold tones, but nevertheless very satisfactory ones. The other filter is the regular K 1 filter that is ordinarily used for black and white film. This filter used with Kodachrome should be considered to have a 2 times filter factor. That is, the lens diaphragm should be opened one stop over the setting for the film without the filter. (The K 1 filter with black and white film ordinarily does not increase the exposure requirements). The color values of scenes taken on cloudy days with the K 1 filter tend to be warm in tone, yellows and browns predominating. The choice between the haze filter and the K 1 is purely a matter of personal preference. Both are an attempt to make the colors seem as we think they are and neither is perfect.

Fast panning, always annoying in black and white filming, is terrific in color. The color scene is so interesting in all parts, background and foreground alike, that we are very disturbed to see a particularly nice color rendering whisked away. It is a good rule to insist that *no* panning be done with color film unless it is to follow some moving object. A broad vista which might prompt one to swish his camera about is much better recorded in a series of two or three steady shots.

The change in the appearance of a scene as the exposure is varied has many ramifications. In black and white filming the change in exposure results in little more than a slight change in density. In Kodachrome work, however, a deviation from normal exposure gives very different results. As the exposure is reduced under normal; the color values change to become richer and more prismatic at the same time the density increases greatly. The colors also become colder, tending to bluish tints. When the exposure is increased more than normal, the colors become more pastel in quality, tending to pinkish tones. The density becomes much less until in extreme over exposure the colors become washed out and the scene appears to be out of focus.



"Sand Expanse"

R. Owen Shrader

Advanced Medal Print

■ Mr. Shrader has been markedly successful in conveying the impression of great size and distance in this picture. Our imaginations are instantly struck with the vastness and loneliness of this desert region. The scale of the picture is, of course, established by the figures which stand out from their background in such brilliant relief. The brilliance of the figures is most important, for if they were less strongly shown the picture would have a monotony of tone that would surely kill its effectiveness. Observe that this impression of a vast expanse is obtained with rigidly limited material. Mr. Shrader has not actually photographed any great area, but rather has **suggested** that this lonely, barren, uninhabited desert stretches endlessly beyond, and has left the rest to our imaginations. It is just such resort to suggestion that is the substance of true artistry. It is also true that a picture which attains its ends by suggestion can be much more effective than one which attempts a completely factual exposition of its theme. For the latter is limited by actuality, the former only by the boundless reaches of the most active imagination.

Data: 1/10 sec. at F:25, on Agfa Plenachrome cut film, in DK-50; E. K. P.M.C. No. 11, in D-72; partially toned. 10½"x13" prints on 14"x18" mounts may be obtained at the price of \$5.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Second Award
Advanced Class



"Hearts in the Wind"
Don Wallace

fully. Its objective is to show the female figure somewhat diffused so as to heighten the suggestion of romance. In this case the man's arm turns up as a stumbling block so that it might have been better to photograph the figures in complete depth of focus, and to subsequently introduce such diffusion as appeared necessary. Congratulations on a title both appropriate and poetically beautiful. Such things are rare indeed.

Data: 9x12 cm. Avus; Skopar lens; stop F:8; panchromatic film; print on Agfa Brovira.

Third Award
Advanced Class

■ Here is proof of the fact that candid camera photography, at its best, can be marvelously effective. Observe how completely and naturally this picture tells its story. Note the action shown in the barker, the subtle expression in the girl's face, while even the back of the on-looker's head is eloquent of his intense interest in the proceedings. The merits of the picture will be evident to all, but admittedly there will be those who will object to it on moral grounds. We have neither the space nor the inclination to discuss the matter of artistic morals, for such arguments are, for the most part, futile at best. It should be sufficient to say that it is the artist's function to report life as it is, and to so clarify his presentation that the impression he seeks to convey will be vivid and compelling. Those who seek to limit the artist to pleasant subjects are simply refusing to face the realities of our existence. The penalties of such an attitude, in a larger field, are only

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"The Come-On"
Milton Inman

Fourth Award
Advanced Class

■ There is something definitely entertaining about the way this little dog paddles along in the shadow of his mistress, and that is really the sole justification of this picture. That is justification enough for there are not nearly enough photographs that amuse. We could easily do without the distracting items in the background and the almost disembodied hand. We can get rid of all except the post, and definitely improve the picture, by trimming from the top until the hand is eliminated, and then adding about half as much as was trimmed from the top to the base. It is also interesting to observe that with such a trimming the post becomes much less of a liability than it is with the picture in its present form. In fact it becomes an asset for it breaks up what would otherwise be an uninteresting expanse and assists in suggesting the third dimension.

Data: Kodak Ser. III Special; 1/100 sec. at F:8, on E. K. Verichrome; E. K. Opal T, in D-64.



"Promenade"

Wm. T. Lyons



"Devils Garden"

Ellis W. Foote

Fifth Award
Advanced Class

■ The major technical difficulty in making desert landscapes is to obtain a satisfactory recession of planes. The air is so clear that distant objects, such as the mountains in this picture, are likely to show up as part of the foreground if we are not careful. Mr. Foote has been fairly successful in that respect. There is air between foreground and mountains in this print. The solution of this difficulty lies in taking the picture early or late in the day when the atmosphere is strongest and staying away from filters which tend to cut out the atmosphere. Any filter

which absorbs blue will do this. A further aid, and one which Mr. Foote might have used to advantage had it been possible, is to include some fairly prominent object in the middle distance so as to establish an intermediate plane between foreground and distance. Some printing in of the foreground, below the base of the tall cactus, so as to get good strong shadows in this area might help.

Data: 3¼x4¼" Graflex Ser. C; 6½" Taylor-Hobson, Cook, F:2.5; 1/10 sec., at F:16, 8 A.M. on E. K. Panatomic in D-76; Illustrators Special in D-52; 10x12" prints on 16x20" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Drying Headsails"

L. Spuller, Jr.

Amateur Medal Print

■ It is interesting to notice the rather peculiar gymnastics which the eye performs in viewing this picture. Our eye, at least, starts at the lower left and moves up the first sail in a sort of spiraling motion and repeats this movement up the larger sail, culminating at the peak of the mast. This really completes the principal movement but the eye then continues lazily downward on the right edge of the large sail to the point of the bowsprit, moves to the figure, and is then in position to repeat the whole movement. From this it is evident that the composition functions very nicely. Further interest is added to the picture through fine rendering of textures.

Data: Rolleicord; E. K. Panatomic film with K-2 filter; print on Glossy bromide in D-72.

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too evident today. It brings us depressions, wars, fascism and the continuation of diseases that might long ago have been eradicated. If you will forgive us this little sermon we promise not to do it again for a long time.

Data: Leica Model D; 90 mm. Elmar; 1/100 sec. at F:6.3, on DuPont Superior, in Micrograin 85; P.M.C. glossy in D-72. 8x10" prints on 14x18" mounts may be obtained at the price of \$10.00 on application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Second Award

Amateur Class

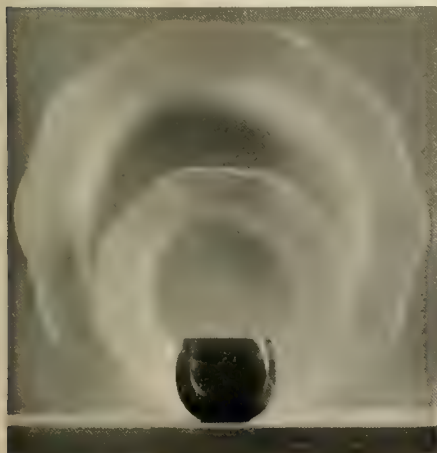
■ The charm of this picture lies in its utter lack of pretence; in the honesty and sincerity with which Mr. Bachmann has handled his subject. A large number of amateur photographers seem to be laboring under the impression that they must strive for some elaborate or profound theme, or some more or less eccentric composition or camera angle if their pictures are to be successful. All too often they have no real understanding of what they are trying to do. Good pictures which depart from common practice in any way are not achieved by chance, but are made in that manner because the photographer knew in advance what he was after and discovered that a somewhat original approach was a good way to reach his objective. That is not the same as trying to be different with no idea of how or why to start with. The amateur, until he has gained much experience would be well advised to learn a lesson from Mr. Bachmann's fine picture, and simply make a good clean honest photograph. Its honesty and its naturalness will make it pictorial if it is well done. From the technical standpoint this picture is truly superb.



"Jus' Boy"
Barton Bachmann

Data: Graflex; Kodak Anastigmat; 1/40 sec. at F:16; very bright sun; on Defender X.F. Pan., in D-76; Defender Velour Black W, in D-64.

7x9" prints on 12x15" mounts may be obtained at the price of \$3.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Opalescence"
Edna Breslawsky

Third Award

Amateur Class

■ Miss Breslawsky has found some very attractive material for a still life study and has arranged her pieces into a most interesting composition. The choice of back-lighting is a most happy one for it brings out the translucent qualities of the glassware, and consequently adds interest to the picture. We are sorry, however, that the picture falls down technically. With proper exposure and development this print would have had a fine luminous quality and a delicate texture that would have added much beauty to the picture. Just why it was thought necessary to expose with such a peculiar and very weak source of light as is disclosed in the technical data, we do not know. Surely the results sought after could have been obtained with a very simple set up of artificial light properly balanced before and behind the object. This is certainly worth doing over.

Data: 3 1/4 x 4 1/4" Graflex; 5 1/2" Kodak Anastigmat; 6 hrs. at F:16 and 2 hrs. at F:8, by daylight thru crack between drawn shade and window frame; E. K. S. S. Pan., in M. Q.; Defender Velour Black in D-73.



"Knitting the Raveled Sleeve"

Dr. M. Wishengrad

from the right till we cut ever so little from the seat of the gentleman's pants. This gives us a vertical format with the attention much more strongly concentrated on the figure, which is after all the principal object and consequently must be catered to.

No Data.

Fourth Award

Amateur Class

■ Mr. Wishengrad has caught a most interesting subject and very nicely at that. As a general thing we may say that the more complicated or elaborate one's material is the more it becomes necessary to concentrate the attention upon a small part of that material, in order to avoid unnecessary confusion in the picture. Because of the welter of interesting items in this material we certainly feel that too much has been included in the picture space. We would trim in from the left until the edge of the print cuts into the paper bag at the base of the print, and in

Fifth Award

Amateur Class

■ Striking proof of the progress that is being made by Minicams throughout the country, is the fact that only about two years ago it was a rare thing for a miniature shot to win an award in these competitions. Now, Minicams are winning places each month in spite of the fact that the average quality and quantity of prints received is distinctly better than formerly.

Mr. Russo offers a subject with a most appealing delicacy. Observe how important to the success of the picture are the shadow forms at the top. Without these shadows there would really be no composition for the two small bushes with their accompanying shadows would be too monotonous and static to form a pleasing arrangement by themselves. There is some falling off of tone in the upper and lower left corners which should be corrected by dodging in.

Data: Leica; 50 mm. Elmar; 1/100 sec. at F:6.3, with No. 1 Leitz Yellow filter, 1:30 P. M. in December; E. K. Super X in Edwal 12; print on Tuma Gas, blue toned.



"Winter Filigree"

J. Russo

Monthly Competitions

Scoring for Club Trophy Cups

The following won points for their clubs in the advanced class: Don Wallace and Wm. T. Lyons, for the Fort Dearborn Camera Club; R. Owen Shrader, Milton Inman, and Ellis W. Foote, for The Pack Rats. Only four of the five points allotted to first prize can be credited to The Pack Rats, since that brings Mr. Shrader's total of earned points to 15, the maximum which an individual may earn for his club. Mr. Shrader is still welcome to compete on the same basis as before, only no points will be allotted for any awards he may win during the remainder of this year.

The following won points for their clubs in the amateur class: J. Russo, for the Brooklyn Edison Camera Club; Edna Breslawsky, for the California Camera Club; Dr. Michael Wishengrad, for the Miniature Camera Club of New York; L. Spuller, for the Photographic Society of San Francisco; and Barton Bachmann, for the Redlands Photo Pictorialists.

Contributing Clubs

Amherst Camera Club (Mass.)	Miniature Camera Club of New York
Brooklyn Edison Camera Club	Miniature Camera Club of Oakland (Cal.)
California Camera Club (S. F.)	Norfolk Photographic Club (Va.)
Fort Dearborn Camera Club	Photographic Society of San Francisco
Golden Gate Miniature Camera Club	Redlands Photo Pictorialists (Cal.)
(S. F.)	San Jose Camera Club (Cal.)
Green Briar Camera Club (Chicago)	Springfield Camera Club (Mass.)
Kodag Pictorialists (Rhineland, Wis.)	The Pack Rats (Pasadena, Cal.)
Kodak Club of Rochester	Washington Pictorialists (D. C.)
Los Angeles Camera Club	

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club.....	28
Pictorial Photographers of America.....	12
Los Angeles Camera Club.....	11
Photographic Society of San Francisco	7
Montreal Camera Club.....	2

Large Clubs Amateur Class

Golden Gate Miniature Camera Club.....	15
Photographic Society of San Francisco	11
Pictorial Photographers of America.....	9
California Camera Club.....	7
Miniature Camera Club of Oakland.....	5
Camera Club of Ottawa.....	3
Miniature Camera Club of Detroit.....	3
Miniature Camera Club of New York....	2
Brooklyn Edison Camera Club.....	1

Small Clubs Advanced Class

The Pack Rats.....	29
Whittier Camera Club.....	3
Washington Pictorialists	2
East Bay Camera Club.....	1

Small Clubs Amateur Class

Omaha Camera Club.....	8
Riverside Camera Club.....	7
San Jose Camera Club.....	7
Washington Pictorialists	6
Redlands Photo Pictorialists.....	4
Camera Club of Long Beach.....	3
Calgary "Y" Camera Club.....	2
Norfolk Photographic Club.....	1

Club Notes

Forthcoming Exhibitions

Exhibition of Pictorial Photography of the Buffalo Camera Club. Address H. W. Schonewolf, Buffalo Camera Club, 528 Elmwood Ave., Buffalo, New York. Closing date August 6, 1936. September 6 to 27, 1936.

Second International Focus-Salon. Address Director Focus Foto-Salon, Focus, Ltd., Bloemendaal N. H., Holland. Closing date August 10, 1936. Entry fee 2,5 Guilders. Limit five prints, must be unmounted. September 12 to 27, 1936.

Fourth International Salon of Pictorial Photography. Address Fotoklub Zagreb, Masarykova 11, Zagreb, Yugoslavia. Closing date August 20, 1936. Entry fee \$1.50. Limit four prints. October, 1936.

Second International Exhibition of the Union of German Associations of Amateur Photographers. Address "Rhenus" Transportgesellschaft m.b.H., Zu Handen der Ausstellungsleitung der II. Internationalen Schaw der Amateurfotografen, Frankfurt, A.M., Messegutertalle, Germany. Closing date August 15, 1936. Entry fee, \$1.00, limit six prints, unmounted. September 26 to October 11, 1936.

Fifth South African International Salon of Photography. Address, Johannesburg Photographic Society, P. O. Box 7024, Johannesburg, So. Africa. Closing date August 14, 1936. Entry fee 5 Shillings. October, 1936.

The London Salon of Photography. Address The Hon. Secretary, The London Salon of Photography, 5a, Pall Mall East, London S. W. 1, England. Closing date September 2, 1936. Entry fee 5 Shillings. September 12 to October 10, 1936.

Tenth Annual Open Exhibition of the Lincoln Camera Club. Address Miss E. Redfern, 146 Burton Road, Lincoln, England. Closing date September 5, 1936. Entry fee 1 Shilling per print. October 15 to November 12, 1936.

The Third Canadian International Salon of Photographic Art. Address Exhibition Secretary, Canadian International Salon of Photographic Art, The National Gallery of Canada, Ottawa, Canada. Closing date September 10, 1936. No entry fee required. October 23 to November 15, 1936.

Fourth International Exhibition of Photography at Budapest. Address Magyar Amatorfenykepezok Orsz. Szovetsege, Erzebetkrout 9, Budapest VII, Hungary. Closing date September 15, 1936. Entry fee Sfr. 5. Limit four prints. October 24 to November 9, 1936.

47th Annual International Exhibition of the Rotherham Society. Address Hon. Exhibition Secretary, E. George Alderman, Ruardean, Newton Street, Rotherham, England. Closing date September 21, 1936. October 14 to 17, 1936.

First Annual National Salon, sponsored by the "Oval Table". Address Mr. Joseph M. Bing, Secretary of the Oval Table, 10 West 33rd Street, New York, N. Y. Closing date October 6, 1936. Entry fee \$1.00. Limit four prints. November 1 to 15, 1936.

XII International Salon of Photography at Zaragoza. Address Secretary of Sociedad Fotografica De Zaragoza, Plaza de Sas, 7, Zaragoza, Spain. Closing date September 10, 1936. Entry fee \$1.00. Limit six prints. October, 1936.

The Photographic Society of America One Hundred Print Salon. Address Dever Timmons, A.R.P.S., Salon Secretary, Box 216, Coshocton, Ohio. Closing date October 1, 1936. Limit 4 prints. Entry fee \$1.00. Open to all photographers of the United States, Canada and Mexico, and all members of the Society regardless of residence. Selected prints to be exhibited in the United States and Canada during 1937.

Second Philadelphia National Salon of the Miniature Camera. Address E. R. Baltz, Salon Secretary, c/o Dooner Studio, 1724 Chestnut St., Philadelphia, Pa. Closing date November 7, 1936. Entry fee \$1.00. Limit 4 prints. December 1 to 12, 1936.

Fourth Wilmington Salon of Photography. Address E. W. Sautter, P. O. Box 818, Wilmington, Delaware. Closing date December 15, 1936. Entry fee \$1.00. Limit 4 prints. January 18 to 31, 1937.

Fox River Valley Photographic Exhibit. Sponsored by The Green Bay Camera Club and The Appleton Camera Club. Address Roy E. Scheils, 305 S. Quincy St., Green Bay, Wisc. Entry fee \$0.50. Limit 4 prints. Closing date December 31, 1936. No pictures may be removed from the Exhibit before July 1, 1937. There are two classes in the exhibition, advanced and elementary. In the latter class the print need not be entirely the work of the exhibitor.

Exhibition

The public is cordially invited to attend an exhibition of photographs by members of the Photo Tech Camera Club, of the Rochester Athenaeum and Mechanics Institute, to be held at the Institute during the week of September 20-26, 1936.

Photographic Society of America Print Interchange

New rules for the Print Interchange of the Photographic Society of America, provide that individual members of the society may submit four prints each as individual members in addition to those they may have included in club groups. No duplication of prints is permitted however. Prints sent in by individuals will be judged by a competent jury, and all prints accepted will be made up into groups of thirty or forty and circulated among the clubs. All prints accepted from one person will be included in the same group. Prints must be received by the Interchange Director, Robert N. Bushman, 13 State St., Schenectady, N. Y., by August 21, 1936.

Photographic Contest

The Magazine ASIA announces a contest for unusual photographs of the Orient, first prize, \$50.00; second prize, \$25.00; third prize, \$10.00; and ten prizes of \$5.00 each. Contest closes November 1, 1936. Write to J. Walter Flynn, Art Editor, Asia Magazine, 40 East 49th St., New York, N. Y., for the rules governing the contest.

The Panchromat

Under the direction of their new president, Raymond B. Collierd, the Photographic Society of San Francisco has blossomed out with a most interesting club publication with the above title. Those interested in seeing a copy should address corresponding secretary Allan Sweet, 1303 16th Ave., San Francisco, Calif.

Colby College Camera Club

The Colby College Camera Club at Waterville, Maine, ended its year's program with a week-end excursion to Bar Harbor and Arcadia National Park, attended by 14 members. They found unusual pictorial material in the forest, mountain, lake, ocean shore, and surf scenes which are all found in this area. Other activities during the year included the beginning of

a movie film in color of campus life, a series of still-life illustrations for the sections of the year book, a number of meetings and lectures, and individual photographic work of all kinds. New officers for the ensuing year have been elected as follows: President, Phyllis M. Jones; Vice-President, Willard D. Libby; Secretary, G. Ellis Mott; Treasurer, Machaon E. Stevens. Mr. Joseph Coburn Smith will continue to serve as faculty adviser to the organization.

The Telephone Camera Club of Manhattan

The Club invites all members of the Bell System interested in Amateur Photography to affiliate with the 190 members now actively participating in the Club's largest year. There is Regular Membership available to all those who wish to participate in all the activities of the Club, and Associate Membership available to those who wish to limit their activities. The dues for the balance of the Club's fiscal year ending June 30, 1936, for the former are \$2.00, and in addition there is a \$1.00 initiation fee. For the latter they are \$1.00. Special attention is called to the Course given by Nicholas Haz on "The Fundamentals of Picture Making" for which a nominal fee is being charged **all** participating members. Some others may be included at a slightly higher fee. The activities of the Club comprise Regular Meetings with well known speakers and Print Problem Competitions; Instruction Groups for beginners as well as advanced workers; Movie Groups which explore practical as well as theoretical problems; Outings; Semi-annual Salons and Traveling Salons, and the Club publication "The Filter". All meetings are held at 140 West Street, New York City, 30th floor, Classroom A, on the 2nd, 3rd, and 4th Thursdays, respectively, of each month. Member Club; Photographic Society of America and Amateur Cinema League. President, Edward Alenius, A. R. P. S.; Sec'y. - Treas., Frank Liuni. Information regarding all phases of the Club's activities may be obtained from the Sec'y.-Treas. on request. Address, 140 West Street, New York City, Room 1469, or by telephoning Exchange 4-4600, Ext. 174.

Flint Camera Club

After meeting for several months at the homes of interested parties, the Flint Camera Club was duly organized and now meets the first Tuesday of each month in suite 1513 of the Union Industrial Building, Flint, Mich. At the organization meeting the following officers were chosen: G. E. Conde, President; H. Hammond, Vice-President; Dr. G. H. Youmans, treasurer; and J. W. Rose, Secretary; Frank D. Fallian was elected to serve on the executive committee; Lawrence Slaght was appointed chairman of the Print and Competition Committee; Franklin D. Cummings, Chairman of the Program Committee, and Adrian R. Cooper, Chairman of the Committee on Publicity. The first project assigned was that of night pictures outdoors. Projects for the months of June and July have been assigned—for June, "Spring"; for July, "Sports Action". All print exhibits are open to entry of general subjects. Membership in the Flint Camera Club is still open to men and women who are interested in photography. Professionals are not barred. All those interested in joining should communicate with J. W. Rose, 2229 Mallery Street, Flint, Mich. Members of the Flint Camera Club will welcome suggestions from other organizations on programs and other activities.

Traveling Show Available for Exhibition

The E.P.I.C. Pool, a small invitational group of photographers around San Francisco Bay, have completed their First Permanent Exhibit, consisting of the 50 best prints out of 618 submitted to their competitions. The collection has been built up gradually and represents the combined opinion of 19 different juries and presents a great variety of subject matter, treatment and technique.

This group does not function as a camera club; its aims, procedure and organization are entirely different from any other association of photographers. They feel that there is a certain monotony to standardization of any sort and not only is there variation to the pictures themselves but the mount and print sizes vary all the way from 11 by 14 prints on 16 by 20 mounts down to 4 by 5 prints on 8 by 10 mounts.

This collection is available for exhibition

under the usual terms, namely that the organization or gallery that exhibits it shall pay transportation charges to the next place of exhibition and that they record their showing of it by placing their stamp or sticker on the back of each print. It may not be shown in the window of any store or other window space because of the sun's damaging effect.

Those interested in exhibiting this show should address J. S. Garnett, c/o Allied Arts Guild, Menlo Park, California. It may be had for a one night display at any camera club or as long as a month if suitable hanging arrangements are available. Date and period desired and how it is to be shown and hung should be stated.

Photographic Instruction

The Tripod Club of Central Branch Y.M.C.A., Brooklyn, N. Y., will present its third series of courses in "Fundamentals of Photography" and "Advanced Technique of Photography" on Tuesday, September 29th and October 6th, respectively. These courses will consist of fifteen sessions each, meeting alternate Tuesdays, 8 to 10 p. m., preceded by a half hour's discussion of the student's personal problems and his work. In addition, there will be field trips to nearby points of interest. The professional and the amateur alike will benefit to an unusual degree by the clear-cut and precise presentation of the subject matter and will have an opportunity of exhibiting his final work at a public exhibition.

Due to popular demand, there will be special courses in Portraiture and Retouching, for groups limited to six students each, thereby making possible individual instruction. Schedules for these special courses will be arranged to suit the individual groups.

Mr. J. Ghislain Lootens, who has proved his ability as an instructor of exceptional skill and who is equipped with an unusual knowledge of all the diverse and intricate methods of treating the negative and print, will again be the instructor.

For further information, communicate with the Tripod Club, Central Branch Y. M. C. A., 55 Hanson Place, Brooklyn, New York.

Camera Craft Traveling Salons

The Camera Craft Traveling Salons are currently on exhibition as follows:

Group I

Boulder Lens Club, Boulder, Colo., July 23 to 29.

Omaha Camera Club, Omaha, Nebr., August 3 to 16.

Oklahoma Camera Club, Oklahoma City, Okla., August 20 to September 2.

Group II

Harold Wagner, Chautauqua, N. Y., July 20 to August 20.

Group III

California Camera Club, San Francisco, Calif., July 1 to 30.

Palo Alto Camera Club, Palo Alto, Calif., August 3 to 16.

San Jose Camera Club, San Jose, Calif., August 19 to 25.

Monterey Peninsula Camera Club, Pacific Grove, Calif., August 28 to September 6.

Group IV

Lansing Camera Club, Lansing, Mich., July 29 to August 11.

Cleveland Photographic Society, Cleveland, Ohio, August 15 to 21.

The Portage Camera Club, Akron, Ohio, August 24 to September 7.

Group V

Niagara Falls Camera Club, Niagara Falls, N. Y., August 24 to 30.

Group VI

Fort Dearborn Camera Club, Chicago, Ill., July 1 to 31.

Bessemer Park Camera Club, Chicago, Ill., August 3 to 16.

Peoria Photo Forum, Peoria, Ill., August 20 to September 2.

Group VII

Schenectady Photographic Society, Schenectady, N. Y. July 21 to August 3.

Amsterdam Camera Club, Amsterdam, N. Y., August 6 to 20.

Orange Camera Club, East Orange, N. J., August 24 to September 6.

Group VIII

Greater Lynn Camera Club, Lynn, Mass., July 22 to 28.

Camera Club of Springfield, Springfield, Mass., July 31 to August 13.

Camera Associates of Boston, Boston, Mass., August 17 to 30.

Association News

1936 P. A. of A. Convention Now Rapidly Approaching

It will not be long before professional photographers from all sections of the country will be leaving their studios and heading for the Hotel Stevens, Chicago, Ill., where the 1936 convention of The Photographers' Association of America will be held from August 24 to 28 inclusive. Interesting this year is the fact that the National Photographic Dealers' Association will hold a national meeting concurrently with the convention, in line with the practice in vogue in many other industries where manufacturers, wholesalers and retailers join in one big convention.

The portrait program is now completed. It includes: Professor Robert R. Aurner, University of Wisconsin, Madison, Wis.; Mrs. Beulah Collins Bailey, Indianapolis, Ind.; R. A. Buchoz, Burroughs Adding Machine Co., Detroit, Mich.; Claude K. Constable, Omaha, Nebr.; William Gerdes,

New York City; Paul Linwood Gittings, Houston, Texas; D. Peterson, Princeton, Minn.; Michael Romeo, Syracuse, N. Y.; George A. Saas, Indianapolis News, Indianapolis, Ind.; Dr. Max Thorek, Chicago, Ill. All branches of portrait work are covered by the best talent available, and special attention has been given to business-getting talks by specialists who will send their hearers back home with new inspiration and ideas.

Entertainment features, which will be ample and extensive, are in the hands of a Chicago committee. Suffice it to say that there will be something doing every evening. From the reports of traveling men and from what photographers have written direct, it is evident that there is tremendous interest in the convention, and that the attendance should be large. For any information, write the Executive Manager, P. A. of A., 501 Caxton Building, Cleveland, Ohio.

Notes and Comments

Shots By the Dozen

Taking pictures with machine gun rapidity! This has been the dream of many newspaper photographers as well as amateurs who picture various sports and sports events. How many times has the photographer wished that he could make a series of shots showing a pole vaulter hurl through the air, clear the bar, and land, or a bicycle rider take a spill, etc.? In the past, making such a series of photos was beyond the range of the average amateur, for before he could rewind the shutter or transport the film for a second exposure the action was over.

The extreme versatility of the Leica camera is a known fact, and this versatility has now been extended by the new rapid winder to enable a series of rapid shots to be made. The latter consists of a special baseplate which is interchanged with the regular baseplate of the Leica. A trigger is provided on the rapid winder, and by pulling it along a groove the shutter is wound and the film transported. To make the exposure, it is therefore only necessary to pull the trigger of the rapid winder and press the shutter release button. The rapidity with which exposures can be made is limited only by the speed with which the photographer can pull the trigger. It takes but 15 to 20 seconds to make 36 exposures.

We are informed by E. Leitz, Inc., 60 E. 10th Street, New York City, that a slight adjustment will have to be made on older models of the Leica camera to enable them to accommodate this new accessory. For further information, the reader is advised to write to E. Leitz, Inc., 60 E. 10th St., New York City.

Market Your Gadgets

The Lik-A-Lok Company, 2539 North 61st St., Milwaukee, Wisc., inform us that their firm is equipped and prepared to carry through the engineering, manufacturing, and marketing of new photographic appliances. They are anxious to hear from photographers who have worked out useful gadgets for their own use and who would

be interested in having this company turn their ideas into money. If you have a useful gadget it should be well worth your while to get in touch with the above company. At present they are offering an Automatic Shutter Release for use with the Leica camera. This release works with a "trigger squeeze" movement, and prevents accidental exposures or the touching of the shutter speed dial. They also have a Lens Adapter Ring which fits any Leica lens to movie cameras using standard screw type lens mounts.

Permanent Photo-Murals

A new method of inlaying photographs in door surfaces or wall panels has been developed by The Formica Insulation Company. These photographs may be of any subject and may be either black and white or black and sepia. They retain their original color and tone values when pressed into a Formica sheet, and these colors are extremely stable and do not change under the influence of light.

These photo inlays may be quite large—areas on the order of three by four feet being possible. The photo becomes an integral part of the Formica sheet. It can be washed with soap and water or cleaning solutions based on the usual organic solvents. It is hard and durable.

These photo inlays are produced by making enlargements on a special photographic paper which, while it has the usual emulsion, is not coated otherwise and quite porous. This paper will absorb the resins used as a regular binder in Formica sheet and the photograph is vulcanized permanently into the Formica sheet, becoming an integral part of the Formica.

Super Ikomats Prove Strong Sales Leaders

Camera preference today is swinging markedly to compact auto-focusing models. According to Carl Zeiss, Inc., 485 Fifth Ave., New York City, the twin image and focusing Super Ikomats have proven the most popular series ever added to the Zeiss Ikon line. Though but recently introduced, the new fast lens F/2.8 Super

Ikomat B is proving immensely popular. This new model has a Rapid Compur 1/400, and gives 11-2¼ inch square pictures per No. 120 roll. Other Super Ikomats are: the A, with Tessar F/3.5 and 1/500 shutter, taking 16 vest pocket; the C, with either F/3.8 or F/4.5 with 1/400 shutter and taking 16 V. P. or 8 full size 2¼x3¼ pictures; and the D with F/4.5 and 1/250 shutter, taking 8 2½x4¼ or 16 split size.

Bee Bee Neck-Pod

A new and most convenient photographic accessory, distributed by Burleigh Brooks of New York; the Bee Bee Neck-Pod is ingeniously constructed, staunchly made and offers the user of small, miniature and most 8 and 16 mm. motion picture cameras the convenience of a rigid tripod whose weight including strap is only 4 ozs. It may be easily concealed in a vest or coat pocket without making it bulge and facilitates the making of needle-sharp pictures up to 1/5 second and longer.

The tripod extends to three sections reaching a length of 12 inches. (closed, 5½ inches).

The attached leather strap which is slung around the neck is adjustable, enabling one to bring the camera up to eye-level. The lower end of the tripod is pushed firmly against the body. This secures the camera, permitting the operator to devote more attention to the pictorial aspect of his scene or subject.

The tripod head or platform is detachable so that it can be mounted on the top or side of the tripod, thus allowing one to hold the camera both vertically and horizontally.

Another desirable feature of the tripod head is that it can be either raised or lowered depending on the depth of the camera's tripod socket.

It is furnished in a tan leather zipper case and sells for \$5.50.

For further information write to Burleigh Brooks, 127 W. 42nd St., New York, N.Y.

Vocational Guidance in Photography

The Rochester Athenaeum & Mechanics Institute have published their catalogue for the 1936 Day Program. This unique

organization, which exists for the purpose of training young men and women in the industrial arts, has a course in Photographic Technology which will be of interest to many young people just out of High School who are considering photography as a vocation. A two-year course is offered at very reasonable tuition to those who are able to furnish entrance requirements and provide living expenses at Rochester. In many cases the students are able to earn their tuition and living while taking the course by a co-operative plan whereby they are employed part time in the photographic industry in and around Rochester. Those who are serious and wish to get the best foundation for a vocation of photography would do well to get in touch with the Rochester Athenaeum & Mechanics Institute, Rochester, N. Y. A booklet, "If You Are Considering Photography—" will be sent free of charge.

The Clarovid Model II

The Rodenstock Company of Germany announce, through their American Distributors, The PHOTOGRAPHIC ARTS SUPPLY CO., of 245 West 55th Street, New York, a new camera, the CLAROVID II, whose novel features and refinements should create a practically instantaneous interest among the photographic fraternity.

CLAROVID II is a roll-film camera taking the popularly sized 3¼x2¼" roll film, its construction follows the usual pattern of such cameras, it is compact, beautifully finished, staunchly constructed and should offer its user a lifetime of efficient and highly accurate service.

The CLAROVID II has a built-in distance meter or range finder which is synchronized with the camera's lens and superimposed on the field of its view finder. The range finder has the exceptionally long base essential to precision in this type of gauge. Focusing is accomplished by means of rack and pinion.

The range finder operates at eye-level and it is easy to follow moving objects with this device, as it is not necessary to shift the eye from distance meter to range finder. Its optical equipment con-

sists of a Rodenstock Trinar f/3.9 Anastigmat in Compur Shutter. It lists at \$90.00.

The Photographic Arts Supply Co. will be pleased to send interested readers further information on request.

Perutz Film

Burleigh Brooks announces that he has added a line of Perutz negative material to his varied photographic importations.

The firm of Otto Perutz is long and widely known for its pioneering efforts in the manufacture of photographic emulsions. They have repeatedly anticipated the requirements of both amateur and professional photographers and were the first to introduce ortho and panchromatic emulsions. At the beginning of the century, The Perutz—Eosine plate marked a new step in the progress of photography; somewhat later, the introduction of the Perutz "Perchromo" panchromatic plates established a new era in photographic contrast and color evaluation. This was followed by the Perutz Brown Seal plate, a prototype of the modern high speed universal plate, and thus by a series of gradual innovations, Perutz finally produced the first fine-grain film, thereby furthering the creation of miniature photography.

The following film emulsions will be kept in New York stock by the American Distributors:

Perutz Perpantic Roll Film and Film Packs—23° Scheiner

A panchromatic, fine-grain film which uniquely combines speed with fine grain characteristics.

Perutz Peromnia Roll Film, Film Packs and Plates—26° Scheiner

An extremely high-speed, panchromatic emulsion with fairly fine grain characteristics.

Perutz Persenso Roll Film and Film Pack—26° Scheiner

Perutz Persenso Plates—27° Scheiner

A Universal Orthochromatic emulsion exemplifying the highest standard of perfection attainable in negative material of this type.

Perutz Superorto Plates—26° Scheiner
Exceedingly sensitive, fine grain, highly contrasting and very chromatic emulsion.

Whether used in studios or outdoors, it will yield the discriminating photographer the highest satisfaction in its use.

Perutz Rectipan 35m/m Film— 18° Scheiner

The conception of fine-grain originated with Perutz. Rectipan is the last word in fine-grain emulsions and therefore exceptionally suited to the requirements of miniature photography, as it enables enlargements of a contactlike quality. Sufficiently sensitive to satisfy the demands for which this material has been designed. Comes in various film lengths.

For further and more detailed information on Perutz film, we suggest that you write Burleigh Brooks, 127 West 42nd Street, New York.

Airpainting Contest

The Paasche Airbrush Company announces its second Airpainting contest in which \$1,500 in prizes will be awarded. There are different classes for creative work with the airbrush alone, for retouching on photographs, and for signs lettering or displays using airbrush technique. Full particulars and entry blanks for the contest which closes July 30, 1936, will be sent by the Paasche Airbrush Co., 1909 Diversey Pkwy., Chicago, Ill.

Projector Cases For Eastman Kodascope—Model "E"

The Motion Picture Screen & Accessories Co. of New York announces two new cases for a new projector.

One, a case of the "Ever-Ready" type is called the "De Luxe" model. The projector, during its performance, need not be removed from this case. The projector base fits snugly and firmly into the bottom of the case and cannot possibly wobble. Both sides of the case open flat. This type of construction offers adequate protection to your projector, inasmuch as the handling of the latter is minimized.

Another and more moderately priced model, manufactured by this company for the Kodascope E projector, opens sideways, enabling one to slide the projector from the case.

The specifications mention that the case are of ½" kiln dried white pine with ¼" 3-ply veneer sides, nailed and glued

and that interlocking corners provide for strength and durability. They are covered with brown, washable leatherette, have metal mountings and solid leather handles.

Normand Photo Service

Normand Photo Service is located at 2222 Telegraph Ave., Berkeley, Calif. They have a complete line of Contax, Leica, Zeiss Ikon, and Bell & Howell cameras for your inspection, and are making most liberal allowances for second-hand equipment. The firm also makes a specialty of fine grain processing.

Columbus Photo Supply

An inspection of the bargains offered in the advertisement of Columbus Photo Supply, 146 Columbus Ave., New York, N.Y., will convince you that when this firm says bargain they mean bargain. Write for their complete bargain list and let them know what you are looking for. They'll find it, and at the right price.

Arrowhead Photo Service

Here is a firm that is apparently right on its toes, for already, in their list of bargains appearing in the advertising pages, they offer an Argus camera at second hand, and this fine low priced camera has only been on the market a short while. They also offer 16mm. Positive stock for titling, perforated for use in 8mm. cameras, at only \$2.25 per 100 ft. For further information and additional bargain news write to Arrowhead Photo Service, 610 Third St., San Bernardino, Calif.

New Photo Supply Catalogue Free

Medo Photo Supply Corp. announces publication of their new 128 page catalogue, profusely illustrated and listing all manner of photographic goods at very reasonable prices. The catalogue will be sent free of charge to anyone who will drop a postcard requesting it to: Medo Photo Supply Corp., 15 West 47th Street, Dept. 2C, New York, N. Y.

News from Central

An interesting production of the Central Laboratories is the new Central Monel Metal Adjustable Roll Film Tanks which last a lifetime and are priced incredibly

low. For complete information on this product manufactured only by Central, write for a free copy of their new Summer Clearance Bargain Book which also contains many bargains in still and movie cameras, new low summer prices on films, and reduced prices on photographic equipment of all kinds. Please mention Camera Craft when writing the Central Camera Co., 230 So. Wabash, Chicago, Ill.

General Electric Announces New Photoflood Lamp

A new photographic lamp which produces twice as much light and operates three times as long as the present 250-watt Mazda Photoflood No. 1, has been announced by the Incandescent Lamp Department of General Electric Company at Nela Park, Cleveland, Ohio.

Designated as Mazda Photoflood No. 2, the new lamp may be used on regular lighting circuits of 105 to 120 volts. It consumes 500 watts and resembles the standard 150-watt inside-frosted Mazda lamp both in bulb size and appearance.

The new No. 2 Photoflood was developed for general use in commercial and portrait photography. It offers many of the advantages which the present 1000 watt Photoflood No. 4 has given to professional photographers. It is also recommended to amateur photographers for snapshots, time exposures, and motion pictures (in black and white and in color.) The new lamp provides more light and permits shorter exposures than are possible with the smaller Photoflood No. 1.

In photographic effectiveness, the new Photoflood No. 2 is equivalent to as much as 1500 watts in standard lighting lamps. The color quality of the light is the same as that of the other Mazda Photoflood lamps.

As many as three of the new lamps may be operated on an ordinary housewiring circuit fused for 15 amperes.

Photoflood lamp No. 2 is equipped with the medium-screw base, the type used with Photoflood lamp No. 1 and Photoflash lamps No. 10, 20, and 75. The new lamp may be used in reflecting equipments designed for the photoflash lamp No. 75, provided a standard medium-screw socket extension is employed. It may also be

employed in equipment for the Photoflood No. 4, if fitted with both the standard medium-to-mogul adapter and a socket extension.

Other facts pertaining to the new Photoflood No. 2 are these: Finish, inside-frost; over-all length, $6\frac{1}{8}$ inches; burning position, any; life, 6 hours; and price, 50 cents.

Photographs Wanted

More pictures are needed for More Business. More photographs, by both amateur and professional photographers are being used in each issue by the new monthly magazine, More Business, published by the American Photo-Engravers' Association to stimulate photo-engraving and letterpress printing.

More Business is a young magazine, having made its inaugural bow to the nation last January, but it's a lusty infant, having already attained a circulation of nearly 40,000. It is distributed free by photo-engravers from coast to coast to their customers and prospective customers. Its page size, 11 x 14 inches, gives an opportunity to treat photographic subjects in almost "poster" size.

More Business each month offers an opportunity to photographers everywhere for publication of their work.

"We need pictures with good reproductive values," writes Louis Flader, Commissioner of the American Photo-Engravers' Association under whose direction More Business is published. "Photographs that deal with advertising, or business in general, are especially welcomed.

Photographs submitted for publication in More Business should be sent to the Association's headquarters, 166 West Van-Buren Street, Chicago, Illinois.

Beira and Rafix Cameras

The C. P. Goerz American Optical Co. of 317 East 34th Street, New York, advises that as they still have a fairly good stock of Beira and Rafix Cameras on hand, they do not intend to increase their prices in the immediate future, because of advanced tariff rates on imported cameras. An eventual increase, however, amounting to approximately 33 $\frac{1}{3}$ % is contemplated.

Polarization Filters for Rolleiflex

Burleigh Brooks takes pleasure in announcing that Rolleiflex and Rolleicord

users can now obtain pictures that will show no glare or reflection. This is accomplished by means of Herotar, a polarization filter which works in the following manner: It is placed over the finder lens and is turned until the reflections which disturb the picture vanish. This is observed by looking into the ground glass screen. When reflections are no longer visible, the Herotar is placed on the taking lens in the same position. The picture is then made in the customary manner, the photographer taking care, however, to increase his exposure from two to three times.

Further information on the Herotar and its uses can be obtained from Burleigh Brooks of 127 West 42nd Street, New York City.

New Contax Model II

A new model Contax camera will make its appearance on the American market during the month of June. It is the "Chromium Plated Contax II" with a number of new features that will greatly appeal to the miniature camera enthusiast. The camera body is not square at the ends, but somewhat octagonal like that of the well-known Super Nettel. There is only one window for range and view finder—a great convenience, especially in rapid photography. The shutter winding knob which on the black Contax I model is on the front of the camera, is arranged on top, and the shutter release is right in the center of the knob. The convenient location of the focusing wheel remains where it is in the black Contax I model. The film counting device is built in. A new self-timing device with about 15 seconds delayed action is another one of the new features embodied in this model. The shutter speeds are 1/2, 1/5, 1/10, 1/25, 1/50, 1/100, 1/200, 1/500, and 1/1250. The name of this model is Contax II, while the black model which is so well liked and therefore will be continued, will be called Contax I.

For further information address Carl Zeiss, Inc., 485 Fifth Ave., New York, N. Y.

Kin-O-Lux No. 3

Kin-O-Lux announces a new motion picture film for amateurs to be known as Kin-O-Lux No. 3. The qualities, characteristics and performance of Kin-O-Lux

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No. 1 and 2 are too well known to require further amplification. Kin-O-Lux No. 3, however, is still a comparative stranger to the movie maker.

We are informed that a great deal of study and research preceded the manufacture of Kin-O-Lux No. 3—a high speed panchromatic film possessing some very unusual characteristics. It combines uniquely a hitherto unobtainable correction for all the colors of the spectrum with a fine grain quality generally associated with orthochromatic emulsions.

The speed of Kin-O-Lux No. 3 is given as approximately four times that of an ordinary orthochromatic emulsion and of the earlier type of panchromatic emulsion. This speed may be utilized in three ways: (1) Time of exposure may be reduced to about one-quarter, that is for slow-motion pictures, (2) a correspondingly smaller stop may be used, (3) in studio work, appreciably less lighting is required, thus effecting a considerable saving in the cost of current.

The firm of Kin-O-Lux, Inc., of 105 West 40th Street, New York, will be pleased to send interested amateurs further information on request.

The New Pioneer Camera

Henry Herbert announces the Pioneer, a new camera built to their exact specifications by one of the leading German camera companies.

This camera, a useful instrument for all-round work, is priced with sufficient economy to interest the photographic student who has reached the point where he requires precision and flexibility in his work.

The Pioneer is light, compact, staunchly constructed of metal covered with leather; the bellows is of genuine leather also. Its refinements include: a 10.5cm. Meyer Trioplan f/3.5 lens in Ibsor shutter with speeds ranging from 1 to 1/100 second as well as time and bulb; brilliant view finder with level; eye-level finder; double extension up to 9½"; rising, falling and sliding front; nicked struts; a distance scale calibrated in both feet and meters. Focusing can be accomplished up to 3 ft. enabling portrait photography without the use of auxiliary lenses. Two tripod sockets enable vertical or horizontal adjustments to tripod.

The Pioneer may be used with film pack, cut film and plates. Picture size is 2¼ x 3¼". It is supplied with film pack adapter, 3 single plate holders and ground glass back.

For further information, we suggest you write: Henry Herbert, 483 Fifth Avenue, New York.

Leitz Binoculars

Reaching across space and getting close-ups of distant objects! This feat is simply accomplished by photographers, especially owners of the Leica camera. It is only necessary to unscrew the standard lens of the camera and replace it with one of longer focal length. Photographers are also desirous of applying the principle of obtaining close-ups of distant objects not only when making pictures, but generally as well. On vacation, when making trips, there will be many occasions where close views of distant inaccessible subjects will be desired. When attending sport events, important action is often lost unless there is some means of bridging the distance, to have the participants "brought up" to the observer.

The problem is solved by the use of a pair of quality binoculars. E. Leitz, Inc., 60 East 10th Street, New York City, report the sale of their Leitz binoculars to many photographers. In fact, it is quite common lately to notice photographers having a pair of binoculars strung about their shoulder beside the camera. It is indeed a worthy companion to the camera, and once obtained, a quality binocular lasts a lifetime.

A full line, comprising such types, as special light weight binoculars, wide-field binoculars, and glasses of extreme light transmission are supplied by E. Leitz. As far as quality is concerned, comparison need only be made with the Leica camera of which they are also the manufacturers. Why not write to E. Leitz, Inc., at the above address, or to Spindler & Sauppe, Inc., 86 Third St., San Francisco, their western distributors, asking for a copy of Pamphlet No. 1247 which describes the Leitz line of binoculars. Also request a sample copy of the June issue of Leica Photography which contains a helpful article on how to select a pair of binoculars to suit one's needs.

Classified Advertisements

Rate: 6 cents a word: minimum \$1.50 each insertion, prepaid. This is purely a convenience department for the reader and for that purpose offers Classified Advertisements at cost. Dealer merchandising ads must be placed in display space at 35 cents per agate line, 10 agate lines minimum. Position Wanted ads, one insertion free. Copy for this department must reach us on or before the 15th.

Items advertised in these columns may be purchased C.O.D. subject to examination and C.O.D. subject to ten days free trial if sent by express. If in doubt, safeguard yourself.

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CAMERA



"Disturbed Tigers, Brookfield"

Alex. J. Krupy

Seventh Chicago International Salon

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"March"

7th Chicago International Salon

Robert Bagby

The Chicago Salon

Carl Scheffler*

THOSE who are interested in the development of modern artistic trends, who visit galleries to see paintings and sculpture, and who are somewhat puzzled by the things displayed there, would undoubtedly be pleased to see in the Seventh International Salon of Photography at the Art Institute in Chicago the interesting and varied works of photography done by men and women who are expressing themselves artistically through that medium. This salon is the Seventh International and the Thirty-Second Annual Exhibition sponsored by the Chicago Camera Club.

Since photography does not lend itself so readily to distortion as does painting, one is given pause in viewing the pictures displayed in this show to wonder if, after all, the beauties of nature interpreted by these photographer artists are not sufficient almost to satisfy the craving of the human soul for expression.

One is deeply impressed with the realization that in this expression man is showing forth again his essentially spiritual nature. Through the mediumship of a much more mechanical, infinitely more complex instrument than brush or pencil he is producing works which reveal his longing for the beautiful. Nor is he in any sense limited to a superficial satisfaction with the mechanical perfection of his work by the nature of the instruments he employs. Of course, speaking generally, it is true that the mechanics of photography seem still to be uppermost in the thoughts of these photographers; not without reason, perhaps, for without a mastery of the mechanical apparatus they can scarcely hope to bring forth their concepts of art and beauty.

Unlike other arts this one is still in its infancy. Mechanical means will be further developed so that photographers may attain all of the

*Director, The Evanston Academy of Fine Arts, Evanston, Ill.

freedom of expression any artist needs. Even now the great variety of technique employed is transcending all the possibilities dreamed of a few years ago. This matter of mechanical achievements, however, is not a fitting introduction to the expression of appreciation which I would like to give. The artistic accomplishments, I feel, are more important than the mechanical, even though the two go hand in hand for it is only when the artist finds a medium pliable to his touch that he can transmute the commonplace into a thing of beauty.

This International Salon may be in some respects like other similar exhibitions. The effects in some pictures are without doubt just the fortunate chance of the moment; others show a clever ingenuity; but the greater number reveal a consummate mastery of the subjects. Technique is made to serve purpose, and the results show forth poetic charm and beauty. Some of the pictures are in themselves still commonplace. It seems obvious in many cases that the photographer has not actually become the artist; he lacks the vision in his choice of material; the general technique of production is wanting. But there are many pictures which catch your eye and hold you spellbound, and to which you return.

The individual pieces of work show clearly the inclination and general artistic concept of the authors. They can be divided into groups: Those interested primarily in the story choose subjects in which the sentiment of the scene dominates and sometimes almost overpowers them, although some photographers do manage to produce a lovely thing even with the sentimental story. The other group has caught the appeal of line and form such as the designer enjoys; in their work you see, through the simplest of means, patterns of light and shadow, of mass, of dark and light so that one feels nothing is lacking but color. When color can be made to play its part this new art will become perfect.

Happily, in this exhibition I missed seeing much of the bizarre, exotic, and tricky, such as has so frequently characterized similar shows. Rather the efforts seemed directed toward a serious contemplation of beauty, or poetical delicacy, or masterfully strong arrangements such as are rarely experienced in nature but which are the very soul of the artist's work.

It is impossible, of course, in the limited space of a short criticism to mention all the pictures that richly deserve it. If I seem to over-emphasize some, please bear in mind that they were selected because they represented certain types; others could have served as well. The strongest impression was made by the group of pictures which for want of a better appellation I term the story-tellers. This group included roughly all those having as the motif of their picturization a story, human appeal, or sentiment. They were the largest number, of course. Outstanding among them I noted the masterful works of the Hon. Alex Keighley, F.R.P.S., of Steeton, England, who handles the difficult carbon print with such evident assurance and consummate skill as to leave one doubtful whether such scenes could actually have been found in nature. I suspect that Mr. Keighley is not only a photographer but a painter also. And one could be quite certain, even lacking knowledge of his name or



"Reverie"

Grace E. Lamb

7th Chicago International Salon



"Tides at Dawn"

John Allen

7th Chicago International Salon

home land, that these compositions came from the hand of a Briton; a Briton paints in that manner. Perhaps there are those who say his work is too illustrative, even sentimental; but I like the subtle qualities of those deep shadows, depths which make one feel the picture is not black and white but rich, luminous color.

Also the work of Carrol Frey of Philadelphia was remarkable. He shows two pictures: one entitled, "In the Sail Loft"; the other, "The Stoker". Both are splendid. The success in these pictures depends perhaps a little too much on the choice of subject and not enough upon interpretation. They seem to be almost a reproduction of what was there. They are not commonplace, however. And after all, it is a prerequisite to have the eye and the soul to see and feel. It is unlikely that anyone would pass without noting the striking form of that semi-nude negro stoker.

Other notable examples of this same type of the story-teller were "Paving" by Carl Oeser of Chicago and "The Sun Comes Out Again" by Robert A. Barrows of Philadelphia. The latter was a picture of some sailors walking on a wet pavement which reflects the brilliant light of the sun. Also in this same category is the work of Stanley R. Johnson of Chicago. His "Going Up" showed fine appreciation of the meaning



"Foggy Morning"

Srecko Grom

7th Chicago International Salon

of line and form in a story-telling picture. Another commendable one was a picture by John Allen of Philadelphia entitled "Tides at Dawn" showing a great sweep of shoreline; a partially obscured sun was reflected in sand and water; the whole was made complete by the tiny dark mass of a boat being launched.

I cannot leave this group without mentioning the works of Julien Duivepart of Antwerp, Belgium; A. Aubrey Bodine of Baltimore, Md., with two contributions: "Oyster Boats at Annapolis", and "Five Firemen"; Alex J. Krupy, also with three: "Disturbed Tigers", "Evening in Mexico", and "An Impression of Morelia". This last struck me as particularly strong in design and simple in concept. Dr. Max Thorek of Chicago had two splendid pictures. I liked particularly one entitled "De Profundis".

The landscape group I find I sometimes confuse with those which tell a story because sometimes landscapes tell stories. I particularly noted a small picture of a snow scene delicately graded in value from the dark tones (approaching black) at the top to the white spots of snow at the bottom. It was of such exquisite feeling as to draw one to it again and again. Chester Wheeler of Rochester, N. Y. did it. And nearby hung a striking number called "Commerce" by W. C. West of



"Prague's Castle"

Ing. Jareslav Krupka

7th Chicago International Salon

Chicago; it was printed on a rough paper, and looked like a watercolor painting done in dark sepia.

Then there was a group of photographs done by people who showed they loved trees. Notable in this group was one by Paul Beiersdorfer of Selina, Ohio, entitled: "Where Hides the Southern Moon". It made one mindful of the subtle effects found in Japanese prints. Also Oliver Berg's "A Springtime Measure", was outstanding; it is a Bromoil Transfer in delicate green tints, so subtle in its tones as to make it almost impossible to reproduce. It looked like a reproduction of a painting by Corot; the design of the trees made one think that Mr. Berg had actually painted them—they grew so beautifully. An oil print entitled "Les Bouleaux", of dark green-gray trees lace-like against a mysterious light, done by Leonard Misonne of Gilly, Belgium, was also very lovely. And last, but not least, Dr. B. J. Ochsner's "Winter Night", a carbon print showing blue trees against clouds, was delightful.

In the portrait group I found most entrancing a picture of an old lady entitled "The Black Lace Shawl", done by Miss Daisy E. Edis of Durham, England. It may have been the shawl which appealed to me; it may have been the old lady; but I think rather that it was Miss Edis plus the old lady and the shawl.

A portrait of Edgar A. Guest by Eugene L. Ray of Evanston, Illinois, was really a character study. A fine composition; perhaps even a work of art.



"An Impression of Morelia"

Alex. J. Krupy

7th Chicago International Salon

Buck Hoy of Chicago presented a lovely picture of a girl dressed in what I took to be a confirmation costume; a delicate treatment well suited to the lovely subject. A portrait entitled "Laura" of a young woman of exquisite beauty, full of character and simplicity, done by James M. Hoddle of Chicago, greatly impressed me.

In this exhibition I was struck by the scarcity of nudes and this made me glad indeed for I have been all too frequently disappointed in those I have seen in the past. Somehow it seems that rarely does the photographer-artist succeed in making a real picture with the nude figure as subject. However, in a few of those shown in this exhibition they had actually achieved it. Richard G. Spencer of Douglastown, N.Y., showed a Chloro-Bromide of a nude torso in sepia color entitled "Mural Section, No. 1." Its relation to a wall decoration was not apparent to me, but he did achieve an interesting pattern in posing this figure. I noted, too, not far from it, a picture really belonging, I presume, in the group of portraits, a Chloro-Bromide profile of a girl. I mention it not because I liked it, but because it seemed to me that the artist went too far from photography, for he produced through photographic methods an outline only of the features of the girl, which in themselves were not lovely, though she may have been. It was done by Mr. Shigeta of Chicago.

There were not many pictures in the class which I call pure design. But notable among those exhibited was a picture called "Glass" by Mrs. Nella R. Galvin of Lima, Ohio, an arrangement of simple shadows cast by some glass bowls in the upper left corner; it was most pleasing.

In conclusion, I feel I should pay tribute to the jury because of their splendid selection. Did I like all of the pictures? Indeed, no; I think I could tell just as long a story about those I did not like: compositions lacking balance, pictures having no meaning, an outstanding picture of some dishes that seemed ugly. But on the whole what must have been apparent to all visitors was what an artist friend, whom I met while viewing the exhibition, said: "Well, they are revealing that they know the difference between a snap-shot and a work of art."

Camera Character

Jerre Bruce

A Chat With Lejaren à Hiller

AN artist is an artist regardless of how one chooses to define the word; regardless of how his art may be applied or expressed.

But an artist who deals in character is more than an artist; he is an interpreter of all that lives and dreams within each of us, but which we can recognize only in others. And in order to interpret, he not only must have seen and experienced, he also must possess that innate power of expression amounting even to the dramatic. Thus:—the name of Lejaren à Hiller is synonymous with photographic characterization.

That Mr. Hiller is so accurate in his interpretations of life and its characters is, perhaps, because there is not much that he himself has missed in the way of peoples and places. He can associate types and envisage backgrounds from a wealth of memories. A hobby, second only to his painting, is travel. As his son repeats with a certain nine-year-old nonchalance: "I've seen the pyramids of Mexico, been inside the crater of Vesuvius, and up the Nile. What next!" His father goes him a few better by wandering the globe gypsy-like whenever the spirit moves, resultantly nursing such lasting recollections as being held up by bandits in Syria and captured by brigands in Mexico. And Mrs. Hiller, better known on both sides of the Atlantic as "Squibby", undaunted by escapades with bandits and undismayed by impromptu treks into odd corners of the globe, shoulders her share of the duffle when "Larry" answers the call of the Canadian Rockies or the lure of the equatorial Andes. Little wonder that he is able to put life into the construction of his work; little wonder that, under his hand, a Babylonian street scene becomes one from which are heard the rumbling voices of the tribesmen and from which exude the pungent odors of the East.

Commercial photography, to the majority of us, is still a little understood and appreciated art. Indeed, that it is an art, many of us might question; but not those who have seen its charm unfold before their eyes. It is not all pretty girls, dressed in the height of fashion and

marcelled according to the latest mode. It is not all Adonis-like men, perfectly groomed and smiling the beguiling smile of the latest movie idol. Scattered mounds of sand and pasteboard rocks, tissue paper and soap suds forming a turbulent stream, and the seemingly distorted effects of a scenic painter smeared upon a prop background, can make a jungle as realistic as any ever photographed by Martin Johnson.

The completed set will suggest fish jumping from non-existent water and birds chirping among the branches of the painted trees. Then, with a model who has never strayed beyond Hoboken, appropriately outfitted by a neighboring costumer, with a girl fresh from a bath of violet water and scented powder, dressed in the raiment of a modern Diana, and with a tiger rug stuffed with pillows, his glass eyes blazing hatred, there is created a scene from the heart of deepest Africa advertising the durability of "Somebody-or-other & Company's" weather-proof face lotion.

Rather than being a question of "Believe it or not!", it is one of "How do they get that way!"

Commercial photography is not new in the sense that it has come upon us suddenly. For as long as most of us can remember, few of us caring to remember that long, we have been trying to ignore the Arrow Collar heroes, the old Chesterfield collegians, the bewitching Fatima females, and the young things who displayed corsets in the Sunday rotogravures. To glance through a newspaper or a magazine without seeing these attractions, would be like driving along a picturesque and fascinating country road with the surrounding scenic beauty hidden by a blank wall of fog-like grey. How would we know that the élite smoke This, that Madam So-and-So serves Such-and-Such, or that Mr. Whosis prefers only Whatses, were it not for these enticing suggestions! How would we know the beauty of the heroine or the loathesomeness of the villain, were it not for the photographic illustrator! So, in order to find out how "they get that way", it becomes advisable to go to him who is accredited with being one of the first in the profession; to one who came East from Chicago with the idea tucked under his arm as many years ago as 1903.

"I painted magazine covers," Mr. Hiller commenced. "I've always painted magazine covers. And I still do them. But I saw the possibilities of the camera, possibilities lacking with the brush. Photographs would be 100% true. They would be convincing; they would be life itself! And of course, there was the important element of speed. But, to sell the idea was something yet again. 'It couldn't be done,' they said. 'Where would you get the characters? Where would you get the background?' They kept saying it. They said it for three years. Then the old Cosmopolitan dared to take the plunge. McClure's tried it. Then Hearst!

"The idea took hold despite the handicap of five by seven cameras and models who thought that to express joy or sorrow meant playing Hamlet. Tried actors at first; then gave up. They overacted, all of them. What with training models, experimenting with lights, and learn-



Histrionic Scene for a Medical Journal"

Lejaren á Hiller

Courtesy Davis & Geck

ing the possibilities of the camera itself, it was a job! But it was fun. It was creative. There were no limits to the possibilities. Photography became an art—and the results have proved contention, as is borne out by the work of my many contemporaries.

"Mabel Normand was one of the earlier models. Alice Joyce, Eleanor Boardman, Martha Mansfield, Wanda Hawley, Billie Dove, Marian Davies,—and on and on! There's a string of them, all names you've seen time and time again. And they were models! They were sad, when to be sad meant being sad and not heart-broken, nor floating away in tears, nor looking as if the world had come to an end without their having had time for a facial. They expressed joy and happiness with their eyes, rather than by contortions of the face and mouth which might have meant anything from a dose of laughing gas to being tickled with a feather. They learned to move their arms naturally, not as if they were shoving a hot pan into an oven. And their figures were grace itself rather than mere physical anatomy.

"Then the advertising companies saw the possibilities. Those early shots were classic. The first I remember doing was for a silk company. The ad was to show a girl, wrapped in silk unwound from a bolt which was to appear at the bottom of the picture. The scene was taken at my home and, in order to get girl and bolt in the picture without cutting the silk, I had to pose her in the living-room and run the silk into the kitchen where the other half of the scene was shot. Then what did I have! Pshaw! Wouldn't be worth five dollars today—doubt if I could give it away! But it was good then. And it was new. In those days, advertisers were satisfied to get a clear picture; now, they raise old Ned if a model's finger nails aren't the right color, or if the hem of her gown doesn't hang properly. They want a boy selling fruits and vegetables along a New Jersey roadside—with lemons and oranges in the picture. New Jersey produces many variety of fruits; but it hasn't yet to my knowledge, mothered a lemon or an orange!

"As the use of photography developed in magazines and other mediums of advertising, so did the excellence of the models and the technique of improvisation. Models learned to be natural. They mastered the art of pantomime. Dramatization for the eye of the camera became a new field in the art of theatrics. Instead of being camera-shy, they became camera-conscious; and, with that accomplishment, we became camera-confident. We dared to step out and attempt the impossible. We gave advertisers more than they asked for and they, in return, stretched their imaginations to an extent which necessitated our vying with Hollywood in producing studio realism.

"Even in this day when gunmen, racketeers, and their ilk, operate in frock coats or boiled shirts, the artist must resort to conventional types or the public will think his conception of character is more than slightly warped. A doctor must wear glasses; a business man a starched collar of conventional style; a sportsman knickers and a wind-breaker. To give the public what it actually wants, but does not know that it wants, would be to affront its supposed intelligence. These types must portray



"Mr. Hiller in a Characterization"

Lejaren d Hiller

Courtesy Underwood & Underwood



"Teddy Bruce Anticipating a Spoonful of Medicine"
For Underwood & Underwood
Client Young & Rubicon

Lejaren á Hiller

by intent rather than by act, and therein lies no small bit of the instinct necessary to the profession. Suggestion is ever more powerful than action. Coordinating groups is, perhaps, one of the most difficult phases of the photographer's work. Before using children in a character scene, one should have obtained a Master of Arts degree in Second Childhood; the secret is to make them regard the procedure as a delightful game. But, above all, the picture must tell the story—without burlesque—often by innuendo. It must possess that spirit which makes it live and speak for itself.

"That New York is the melting pot of the world is too trite to bear repeating. Nevertheless, in a profession which depends upon that wherewithal of characters, photographic artists are thankful for the existence of such a conglomerate mass of humanity. In the early stages of the business, it was necessary to depend a great deal upon types found in the streets. Now, there are professional models. Often even with those two sources to draw from, a characterization cannot be made to the client's satisfaction. Broadway was combed for comic talent when "The Singing Shave" was created; in despair, I became "The Singing Shave" myself. Wouldn't you like to have made a perfect fourth for the three happy revelers, imbibing beer to their hearts' content and, undoubtedly, singing Sweet Adeline? Would you guess from their expressions that the contents of the seidels was near beer and bromo seltzer?

*Obtaining effect
of wind-blown
skirts. Finished
print would be
viewed with
present right
side as base*



Both of these pictures, you will notice, are alive—and that spontaneous-ness is the split second the photographer must catch, no matter how many thousands of plates he may have to waste.

"This jig-saw effect here, with the girl suspended from the ceiling by a rope, was resorted to in order to produce the effect of wind blowing the damsel's skirts. That was a tough one!—and don't think for a moment that the model enjoyed the performance! To get histrionic accuracy requires a sense of art fundamentals, historical knowledge and an eye for minute detail. For instance, take this shot of a Monk studying in his private cell. It's got a certain indefinable charm. It creates a spell. It makes you want to stop and examine it more closely.

"But it's not all beer and skittles! Don't let that idea run away with you. It's not all pretty girls and interesting sets. We have had elephants to photograph—snakes, cats, a hive of bees—Oh, Lord—name something we haven't had! Once we had to take a shot of a snake. A Boa Constrictor! Well, I had handled Rattlers; but not Constrictors. They're in a class by themselves. However, this snake was supposed to be doped—chloroformed!—and, it's not generally known but, snakes don't react to chloroform. It merely dazes them momentarily. To make a long story short, this one came to—the whole twelve feet of it! It wrapped itself around the camera carriage. It broke a leg off the table. It made a madhouse of the office, and raised hell generally. As I said before, Constrictors aren't Rattlers; but all snakes have a soft spot back of the jaw and if you can get hold of that, you can paralyze them. Well,

we tried it! And we tried putting a broomstick in his mouth. And—but why go into all that! We did get the picture!

“Then there was the time when we had about six hours in which to locate an elephant, get him onto a truck and photograph him and the truck being drawn by a small automobile. Well, we finally located an elephant at Coney Island; then we spent most of the six hours trying to get him onto the truck. It was cold, and I had a toothache, and the air was blue for miles around for reasons you can well imagine. We stopped for a moment to cuss some more and figure out what to try next when, looking around suddenly, we saw the beast walking up the ramp himself—but backwards! Needless to say, it stayed backwards!

“But I can take you from the ridiculous to the tragic—and back again. Once it was necessary to find an old codger of about eighty. He was supposed to be on his last legs, half-starved, penniless and waiting for the psychological moment to pass out of the picture. If it were today, such a type might not be difficult to find; but this was during the so-called golden era. Well, I walked through Madison Square Park until I found just the character I wanted. The man was perfect; in fact, so perfect that I was afraid he wouldn't live to get to the studio. He was truly pathetic and, as is so often the case, those in direst need are afraid those offering help have designs on their moral integrity. I tried every bribe known to the art of bribery to get this old fellow to pose for me. Perhaps it was the kindly look in my eyes, that paternal peace-on-earth-good-will-toward-man look! Anyhow, he posed! He was put to bed. The model, supposedly his daughter, knelt beside his cot, as if praying. The effect was perfect. Death must have been in the atmosphere for the scene to have been so natural. But it was too natural! When the shot had been taken and I went to the cot—the old man was dead. Undoubtedly died while I was taking the picture.

“Well, I guess I had a brain storm. I rushed down the street, found the nearest cop and shouted: ‘I've just shot a man and he's dead!’ Instantly cops came from nowhere. Some rushed to the studio while others lugged me off to the station house. It was some time, the most damnable time of my life, before I could convince the authorities that I was sane and that ‘shoot’ in my language meant taking a picture.

“However, a photograph of life must, perforce, portray life—and it is that accurate portrayal which has been sought, and accomplished by all of us engaged in the photographic illustrating profession. The development of the motion picture was of untold help during the early years. The public became accustomed to animation in a picture. The power of suggestion grew into the art of subtlety. When talking pictures descended upon us, pantomime lost a great deal of its effectiveness. Then, as on the stage, the word and not the implication conveyed the meaning. There developed a tendency to underact. To counteract this, photographers resorted to forms and shadow effects; advertisers, to the written blurb. Now, models are often shown in the act of speaking words written by the copy writers instead of telling their story through the medium of expression and gesture.



"The Three Imbibers"

Lejaren á Hiller

Courtesy Underwood & Underwood

"Photography today is a universal vocation and avocation. Competition keeps each and everyone of us on his toes. Better work is being produced. Experienced models are available for any and every characterization. Color photography has emerged from its swaddling clothes. The camera is beginning to portray what our eyes see in Nature's own tints as well as details. Camera character must give way to the art of natural photographic portrayal."

Pictorialism

For Beginners

Harold G. Grainger, A.R.P.S.

Part VI. Focussing.

IN recent issues of "Camera Craft" the attention of beginners in picture-making with a camera has been drawn to certain essentials which have an important bearing on practical work, more particularly out-of-doors. In turn, exposure, height of camera from the ground and lighting have thus received consideration.

The last named is usually regarded by experienced workers as of such consequence that where a subject merits it, the practice of some is to view the scene at different times of the day to note how the changing position of the sun modifies, not only the light but the shade; for it is just as much the latter as the former that makes a subject worth while. By companion illustrations it was demonstrated that the charm of sunlight, which makes so many subjects attractive, is dependent upon aspect; some being best when illuminated from the side: others when the sun, more behind the view, illumines in a particularly beautiful manner the edges of objects only with its rays; probably the most generally delightful of all lightings, (especially in photography). Whereas its opposite, the sun behind the camera, is likely to produce relatively flat and insipid results. To carry off the honours, however, in 'facing-the-light' subjects, a lens hood or sky shade must be used to avoid a fogged negative image.

We will now go a step further and consider focussing, an operation which has long been effectively utilized by leaders in pictorialism to infuse into their efforts the individuality they rightly consider necessary. As the only means of enabling the pictorialist to control the kind of image formed by the lens on the sensitive emulsion and on which, by the way, a great deal of the ultimate success in pictorial endeavour is contingent, it will be obvious that the most should be made of the opportunity presented.

It is noticeable that until photographers begin to take a practical interest in picture-making, the majority either give little thought to, or care very much about, the great possibilities open to them by knowledgeable employment of the act of focussing to secure artistic effects. Their limited vision leads them to be more or less satisfied with sharp-all-over definition. Now this uniformly-distributed sharpness is not by any means the ideal of artistic-minded folk. They, viewing things very differently, have a decided preference for one part only of the subject—usually the centre of interest—to be in sharp focus, (some, as shown later, prefer definition not quite so crisp) with all the rest more or less diffused or subdued in outline, with the proviso that form is not lost.

This type of image, obtained by the employment of differential, that is, selective focussing, is not only universally regarded as definitely artistic, but is actually naturalistic in effect. My use of the term "naturalistic" is based on the known fact that the human eye cannot, because of slight natural imperfections see objects as sharply as the scientifically constructed photographic lens. Faults due to dispersion, spherical aberration, astigmatism, etc., the effect of all of which is to blur and dull the perfect image, as also inability to adjust the vision perfectly, beyond twenty feet, for different planes, are taken into account by those who, following the lead of others professionally trained in art principles, endeavour to infuse naturalism into their pictorial efforts.

In addition these pictorialists are aware that "atmosphere" not only reduces the sharpness of outline and detail of the image, but, intervening layers of this aerial "turbidity" being thicker, as objects become more remote they appear to the eye correspondingly further subdued in outline. For these two reasons, slight inherent faults prohibiting the eye from seeing as crisply as a lens and the operation of natural laws governing atmosphere, artists often prefer (as likewise many pictorial photographers) the chief point of interest very slightly out of focus, with all the rest of the subject, according to its distance from the view-point, still less sharp but without showing fuzziness or loss of structure in the constituent parts. In landscape work especially, where no fewer than four planes—foreground, middle distance, distance and sky—have to be taken into consideration, differential focussing, by providing opportunity for an impression exactly as seen by the eye, is of inestimable value.

The idea, frequently entertained by the unobservant and those uninitiated in art practice, that all objects in every plane (of a landscape for example) are seen equally sharp and well defined at one and the same moment is, it will be realized, untenable. Whatever object we wish to see clearly and accurately, on that we must concentrate our attention; all else is, at that particular moment, more or less indistinct. Unconsciously we do not heed how imperfect this "all-else" is to our naturally circumscribed powers of vision. As our gaze wanders hither and thither over the landscape, each part in turn as it attracts our attention appears sharp to the exclusion of everything else, which, in its turn, can only be imperfectly seen.

When the principles underlying differential focussing and their bear-



"October Sunshine"

Harold G. Grainger, A.R.P.S.

ing on photographic rendering are understood the examination of exhibits by leading pictorialists at various salons, as also the illustrations in such magazines as "Camera Craft" will not only be more interesting but of great educational value. Broadly, it will be seen that whilst masses of tone and relatively small areas of light are dominant features, one part at least of the subject will, for a definite and important reason, be more clearly, though not necessarily sharply, delineated than any other.

Artists, it is well to remember are trained to observe carefully. In their interpretation of nature it is only to be expected that the impression, because of differences in outlook, will vary with individuals. All, however, see subtleties, something that specially appeals to them (probably passed over by the uneducated eye) which they endeavor to portray in their work. This, in fact, is one source of that valuable indescribable quality in pictures,—photographic or painting—generally referred to as "individuality".

Readers possessing lenses with an aperture of U.S. 2 (F:5.6) or larger have excellent opportunities to exploit the potentialities of differential focussing, especially if the operation can be followed on a screen the size of the plate or film. Having selected one's view-point it is generally best to focus with the largest aperture on the principal object, which, in the majority of cases, is in or not far from, the foreground. Then, carefully examining every part of the screen, the lens is stopped down only if (1) any constituent part of the subject is so diffused and its form



"An Afternoon in Summer"

Harold G. Grainger, A.R.P.S.

fuzzy that it attracts attention to the disfigurement; or (2) if it is absolutely necessary to accommodate the aperture to an automatic shutter exposure.

In practice it will be found that a lens aperture of about F4.5 is appropriate for effects (I am here referring to definition) similar to "October Sunshine", a picture featuring a couple of girls in a recreation ground not far from the centre of a great industrial city. The fortunate incidence of bright sunshine in conjunction with differential focussing ensured a rendering, as regards definition, acceptable alike to art critics and those who have a decided preference for naturalistic effects.

I ask readers to imagine the result had there been no opportunity to employ this type of focussing. In the first place it would not have been possible to emphasize, by judicious concentration of the sharpest definition, the figures as chief interest. Secondly uniformly sharp focussing would inevitably have deprived the picture of the atmosphere, the impression that the separate groups of buildings (domestic, church, factory, hospital and town hall) combine so satisfactorily in the provision of a restful, harmonious setting. For it is not only in the arrangement of the different parts, but the gradual diminution of strength of tone as they recede into the distance that is due so much of the natural charm in the subject. Any detail, any sharpness of outline in this background which displays ample variety with delicacy in its tones, would have destroyed irreparably the very qualities which made the subject worth while.

Attention might also be directed to the slender tree trunk and foliage



Print A

on the right,—as also the long connecting shadows they cast across the front,—without which the balance and support so necessary in picture making would be absent.

"An Afternoon in Summer" is the title of another landscape subject which, although it embodies almost all the elements necessary for the preparation of satisfactory pictures of this type is, because of an initial focussing error little less than a dismal failure. This was due to the fact that focussing had, unfortunately, to be carried out under unusually difficult physical and other conditions which left me with a "might-have-been," one of those disappointments always very annoying to the producer; the more so when one knows better. What is altogether wrong, of course, in the print is the fact that the domestic property and white-towered church rising above it across the river are just as sharply defined as the group of figures, etc., on the near bank, where the crispest focus should normally have been concentrated.

All for naught was the effort to make good use of the shadowed foreground, enlivened, in the most suitable place, by a delightful splash of sunshine; the fortuitous circumstance of a large as well as smaller groups of figures, self posed, but just right for the purpose and occupying the most helpful position on the river bank; sun-flecked trunks of impressive trees assuring desirable stability and firmness to the composition; and, providing an appropriate background, as it were, to everything, a simple but satisfactory sky flecked with delicate cloud-forms.

That differential focussing may be advantageously employed in certain types of architectural subjects is demonstrated in "Sunshine, Mist and Smoke", a rendering which, as its title indicates, is an attempt to translate the charm of a combination of these three elements in asso-



Print B

ciation with stone and brick edifices in the heart of a city. The viewpoint, a position fairly close to the supporting columns of a hospital portico, necessitated the use of a fairly large lens aperture, F4.5, to secure detail in the smoke-begrimed portico. This in its turn meant a fair amount of softness in the outlines of buildings in the street below and more so in the dome and associated pillars of the town hall beyond.

The effect is, from the standpoint of those attuned, by careful observation of natural laws, to sympathetic consideration of art principles, much more pictorial and imaginative in its rendering than the companion print B taken with a smaller aperture (F16.) for, as will be evident if impartially compared, an important feature of differential, or selective focussing is the unique power it confers for throwing back, as it were, into their correct relative position in the scene, more distant objects. Examination of print B will make it clear (despite the natural charm of the delicate tones of distant portions of the subject) that the lack of variety in the definition is wholly responsible for its failure to be classed a pictorial production. In conformity with reasons explained earlier in this article, if one's interest be concentrated, as in this instance on the portico columns, the rest of the subject can only, by the best vision possible, be seen only imperfectly and therefore, to convey this impression on the flat surface on which we have to record our impressions, the subdued outline is more correct.

I wish it to be clearly understood that whilst differential or selective focussing is strongly advocated and, shall I say, really necessitated for

pictorial purposes, it is not suitable for the preparation of photographs for scientific and similar purposes where such things as texture are of primary importance. Nor is it usually employed in record work—whether of an architectural nature or otherwise—where maximum detail is required in conjunction with a sharply defined image; nor in those instances where the ultimate object is lantern projection, unless, of course, the lecture is pictorial in interest; nor, likewise, in a great deal of work of various sorts too numerous to detail, increasingly required for illustration or demonstration purposes.

Whilst, as will be appreciated, the simple operation of focussing gives this unique opportunity for the display of artistic skill, it is probably most wisely employed when certain effects are definitely aimed for before the exposure is made.

Practical Miniature Camera Photography

H. Crowell Pepper

Part III. Miniature Camera Lenses, Selection and Use

THE popularity and success of the miniature camera is primarily based upon the remarkably fine lenses with which they are equipped. In the early days of the little camera attempts were made to adapt the then existing lenses. While these lenses were good they were not suited for the making of tiny negatives from which large prints could be made. The best were only capable of forming images with circles of confusion $1/250$ th of an inch. While adequate for contact prints and low diameter enlargements they would not stand the test when enlargements of more than six diameters were needed. Manufacturers soon realized that if the little camera was to stand the test of time three things were needed, better lenses specially constructed for the work, finer grained emulsions and revised developer formulae capable of giving negatives relatively free from grain-clumping. Today we have all three and the true worth of the little camera has been fully vindicated.

Though commonly called lenses a much more accurate term is photographic objective since they are built up of a number of separate lenses, as many as 4, 6, 8 and even ten separate lenses are associated to form the objective. Each type is based upon a special formula and often the components are separated by an air space which acts as a lens. Each type is computed for or perhaps it is better to say with a definite purpose in mind. Every lens possesses certain defects or faults and the lens maker attempts to combine lenses made from different glass and ground with different curves with the idea of correcting these defects. Even after the objective has been mathematically figured out upon paper and then made according to the computations something is found to be radically wrong and a re-computation is necessary. Photographic objectives are comparatively cheap when you take into consideration the factors entering into their manufacture. The greater the corrections the more expensive. The first thing we must learn is that a high grade lens, using the common name, cannot be made and sold at a low price. Consequently, when we buy a miniature camera for a small sum we cannot expect to obtain a really high grade lens. This is particularly true of miniature camera lenses, for as we shall see, the corrections needed in these lenses are far greater than in larger lenses.

A perfect lens system is one which will depict objects situated in any plane at right angles to its optical axis in a conjugate image-plane also at right angles to the optical axis with perfect definition and with perfect freedom from distortion. While the lens optician may theoretically compute such a system he cannot produce a perfect lens system because of the inherent defects of the materials he must use. If he were to confine his efforts to a centered lens system of very small aperture and restricted field he could produce a lens giving a geometrically perfect image of correct perspective. Unfortunately such a lens would possess little value in everyday photography. Modern photographic work demands fast lenses possessing a fairly wide field of view. As speed is only secured by an increase of aperture compared with focal length, the opticians troubles increase out of all proportion with the various increases of speed. When this is coupled with an increase of the angle of view you can readily imagine the problems involved and how wonderful the modern miniature camera lens really is. We can also realize that in producing a lens with a speed of $f:1.5$ or $f:2$ with an angle of view of from 45 to 50 degrees there must be a compromise somewhere. For that reason we speak of these high speed lenses as specialties. They should not be treated as all-around or universal lenses.

There has never been made a lens which will render a point of light as a point in the negative. Our point becomes a small disc. In the past efforts were confined to rendering this disc not larger than 1/100th inch and at a distance of approximately ten inches the human eye conceived this as a point and our negative was considered sharp. If our small negatives were built up of discs 1/100th of an inch they would be practically worthless since any attempt to secure an 8" x 10" print would result in a blurred image. What are the optical deficiencies which enter

into the optician's problems? They are termed aberrations of a primary and secondary character. We cannot discuss all of these or their effects upon the image but a general knowledge of the primary aberrations is essential. There are five common defects termed 1. spherical aberration, 2. chromatic aberration, 3. Astigmatism, 4. curvature of field and 5. distortion.

Spherical Aberration. A point of light is reflected from an object; it reaches the lens surface. Striking the optical axis of the lens it is carried straight through and focused in a certain plane, the marginal ray, however must be bent by the lens and cross the axis at the point of focus of central ray. When this happens the lens is free of spherical aberration. When the marginal and central rays cross the axis at different points a blurred image results because of spherical aberration. There is little trouble to correct for spherical aberration along the axis but as we leave the axis the difficulties of correction become greater with each minute of arc. Sometimes the lens renders the marginal rays as pear-shaped discs instead of perfectly round discs and this is the defect spoken of as coma. Fortunately by using glass of different refractive indices the lens maker has been able to overcome spherical aberration and in our high grade lenses this defect has been overcome to a remarkable degree over the entire field. If we were making astronomical photographs we might find this defect still present but for 99% of our photographic work it will never be noticed.

Chromatic Aberration. A ray of white light is composed of the primary and secondary colors and these colors possess various wave lengths. When they reach the lens they should all be brought to a focus in the same plane. If the lens fails to do this it is defective and the defect is termed chromatic aberration. Here again the optician makes use of the different powers of dispersion of different types of glass. When two types of glass are used and two of the colors are brought into focus in the same plane the lens is termed achromatic. When a third glass is used and all of the colors are brought into proper focus the lens is termed apochromatic. To-day when the use of color photography is becoming more popular the importance of securing a fully corrected lens is quite evident. Even among the finest types of present day miniature camera lenses we find some with good and others with poor color corrections. Since the miniature camera is being used indoors, where the red and orange rays become important factors, we must have a lens with the finest possible chromatic corrections. Many lenses which, outdoors produce sharp images, indoors produce soft images because the red rays are not brought into focus with the blue and green. In infra-red photography we again see the importance of full correction. When purchasing a miniature camera of the type where separate lenses may be bought and used it is advisable to demand the fully color corrected lenses.

Astigmatism. When a lens produces unequal definition of groups of coplanar lines, that is, lines existing in the same plane, lying in perpendicular directions it possesses astigmatism. Fortunately the present



"Un Devoir Difficile"

7th Chicago International Salon

Erno Vadas

day anastigmats are practically free from this defect so we may pass it with this simple definition.

Curvature of Field. It does not take much effort to realize that since the surfaces of the lens are curved the image thrown upon the emulsion is saucer-like though theoretically all image points are coplanar. Our film or plate is flat. The lens makers have succeeded, however, in reducing this curvature of field to reasonable limits within a definite circle. Then they advise the use of a lens of a certain focal length for a definite negative size. The lens will give a much larger circular image but there is a falling off in definition beyond a certain radius. They try to keep the negative within this radius. Often in the cheaper lenses where the corrections are not so good too short a focal length is supplied for the negative size and there is a distinct falling off of definition towards the edges.

With this brief discussion of defects in lenses we may turn our attention to certain other optical qualities more important to us from a practical viewpoint. We must depend upon the manufacturer to supply us with lenses possessing the finest possible corrections. We make our selection with certain definite purposes in mind and when we know something concerning the qualities a lens should possess and have cleared away certain misunderstandings we should have little difficulty.

There seems, for some unknown reason, to be some confusion with reference to the proper focal length of a lens for a definite negative size. The simplest way to meet this problem is to determine what part

the focal length plays in creating our negative image. We shall assume that the focal length recommended by the manufacturer, as the minimum for a certain negative size, is proper for the lens under consideration. We shall also assume the circular image thrown by that lens is sufficient to enable the negative size to fit in this circle giving a sharp image to the edges equally brilliant from center to margins. First upon the focal length depends the size of the negative image of the object photographed. Of course we are considering the object as being a definite distance from the lens. A 2" lens giving an object size of one half inch at fifty yards distance will be one half the object of a four inch lens at the same distance although the area of the latter is four times that of the former. This is purely elementary and nothing more need be added. Second our focal length affects the depth of focus and herein lies one of the great advantages of the short focal length lens used upon miniature cameras. This is of sufficient importance to demand a fuller consideration and we shall treat of it later, under the heading of Depth of Focus. Third. There is an idea that the focal length affects the perspective. This is not true. The perspective effect is solely determined by the distance between the lens and the subject. For the same distance of subject it is immaterial whether the focal length be long or short. When, however, we attempt to secure the same negative size image with a short focus lens as with a longer focus lens the former suffers. We move closer to the object and naturally the perspective effect is different. Herein lies the theory that for portraiture we should use a long focus lens rather than one of short focus. This theory is not followed so closely today as in the past. We simply make a smaller negative image and by projection printing secure the size we wish. I know of a test made by a professional photographer and an amateur wherein the former used his regular equipment, a ten inch lens with a 5" x 7" film and the latter a 2" lens and a film approximately 1" x 1½". Eleven by fourteen inch prints were made from each negative to produce a head of a definite size. The professional photographer admitted that the print from the little negative was superior to that made with his equipment. The depth of focus of the short focus lens gave the amateur's print greater quality. There are times when a longer focal length lens is of value but for the majority of our subjects we can forget this so called problem.

Angle of View. Closely allied with the subject of long vs short focus lenses is that of the angle of view. Normally the shorter the focal length the wider the angle covered by the lens. Even a short increase in the focal length seems to narrow the angle of view out of all proportion with the increase. Today the fine lenses supplied with the highest type precision miniature cameras give angles of view approximately as follows: 2" focus 45 degrees, 85 to 90mm 28 degrees, 135mm 18 degrees. There are times as I previously mentioned when because of physical conditions we cannot approach sufficiently near the subject to secure the desired size image, or when we want a large sized image of a small object, as in nature photography, or when we desire to segregate an object from its surroundings we find the longer focal length lens of real value.

Central and Marginal Brightness of Image. By reason of certain optical laws, a full discussion of which is not important in this series of articles, the marginal image receives less light than the central part. This difference is dependent, to an extent, upon the construction of the lens and the size glass used. Lenses of compact construction using large diameter glasses show this cut-off action to the least degree. We are indeed fortunate that lenses used for miniature cameras must be of compact construction, i.e. lenses designed especially for use with the little cameras. Only recently I had submitted to me a roll of negatives which showed this defect and I was asked why. I explained the underlying reasons and then made an investigation and found that the lens used, by reason of its construction was not sufficient in focal length for the particular negative. This condition has since been corrected by the manufacturer. I merely mention this problem and the reasons to aid any reader whose lens may be giving bright central images with thin or weak marginal images.

Speed of Lens. Probably the greatest value of the miniature camera lies in the use of lenses of extreme speed. Prior to their introduction we seldom heard of lenses of speeds greater than $f:3.5$. The construction of lenses of greater speed was, of course, possible but, not only were they of great size and expensive, they were of little practical value because of their lack of depth of focus. Demands were made upon photography for pictures of subjects so poorly lighted that the ordinary speed lens was of no value. To make a really high speed lens for practical use the lens maker realized that he must confine his efforts to a small, short focus lens possessing the finest corrections and that a special camera must be designed to use such a lens.

The speed of a lens is its light admitting power. This depends upon several factors the relative size of its aperture to focal length, the size and type of glass used, its construction (which includes the number of individual lenses used as well as the number of air spaces) and the color of the glass used. Let us consider briefly these factors. We all know that each lens is supplied with some means of reducing the aperture, generally an iris diaphragm, and that the ring used for this purpose is marked with numbers 3.5, 4, 4.5, etc. These numbers simply denote the size of the opening compared with the focal length of the lens, not necessarily the measured size of the opening but rather the measured size of the entrance pupil compared with the focal length. If we have a two inch lens (focal length) with an opening (entrance pupil) of one inch our lens is said to have a speed of $f:2$, which does not necessarily determine the actual speed (rapidity) of the lens. We may use these "f" numbers to determine with a fair degree of accuracy the relative light admitting properties of two lenses of similar construction. For example, we wish to determine the relative speed of two Tessars one marked $f:3.5$ and the other $f:6.3$, we simply compare the squares of these numbers and have the equation $12.25 : 39.69 :: 1 : 3.24$. Which means that the $f:3.5$ lens is 3.24 times faster than the $f:6.3$ all other factors being equal. If we are using the same lens and know the expo-

sure at f:3.5 we simply multiply this exposure time by 3.24 if we stop the lens to f:6.3. From this we may see the value of these markings.

As I stated above there is a distinction between rapidity and relative apertures. This makes the comparison of speeds between two different lenses of little value. There is a certain amount of light absorption for each glass-air surface in our lens. When the different glasses are cemented together this loss is nil. I mention these facts to show in a simple way why one lens marked f:2.8 may not possess as much actual speed (light admitting power) as a lens with similar marking of other manufacture. If the glass used is slightly yellow or if the balsam used in cementing the elements has become slightly yellow there is a further loss of speed. In closing let me say that the "f" markings upon a lens are not necessarily indicative of its practical speed (light transmitting powers) but rather represent the comparison of the various "stops" to the focal length.

Depth of Focus. By Depth of Focus we mean the distance before and behind the object focused upon within which objects are depicted with a reasonable degree of sharpness. We may obtain a clearer understanding of what follows if we but realize that with any lens there is only one plane of sharpness and that as we move backwards or forwards from that plane the degree of sharpness diminishes. Three factors enter into depth of focus: (1) Distance of the object from the camera, (2) Relative lens-aperture ("f" Number) and (3) the focal length of the lens. From this we may deduce that the depth of focus is greater the greater the distance of the object from the camera; that as we reduce the aperture we increase the depth of focus but reduce the speed of our lens; that the depth of focus is greater with a decrease in the focal length of the lens. We must, however, bear in mind that any discussion of depth of focus, is based upon an arbitrary standard. As we previously learned, no lens will reproduce a point of light as a point but as a disc of a definite size. Therefore this disc, which is termed the circle of confusion, must necessarily enter into our problem of depth of focus. We shall endeavor to make this clearer.

Every photographic lens has what is called its "hyperfocal" distance. This means that if we focus sharply on an object at a certain distance, then all objects beyond half this distance are practically sharp. How is this hyperfocal distance of a lens determined. The following formula may be used: Focal length times focal length times circle of confusion divided by the aperture equals hyperfocal distance. You see that the circle of confusion enters the problem and may now understand the statement in the previous paragraph. If we are satisfied with a larger circle of confusion our hyperfocal distance is greater and we shall see later the depth of focus is increased. We must, however, remember that our little negatives will require considerable enlargement and that consequently we must work with a much smaller circle of confusion. To illustrate: Let us consider a five inch lens with a speed of f:4 and two circles of confusion, 1/100th inch and 1/500th inch. Using our formula we have $5 \times 5 \times 100 \div 4$ or 625" or 52' 1" as our hyperfocal distance

while with a smaller circle ($1/500$ th inch) we have $3125''$ or $260' 5''$. Suppose we make one more comparison, that of a two inch focus lens speed $f:4$ and c. of c. $1/500''$. We will find our hyperfocal distance to be $41' 8''$ as compared with $260' 5''$.

Now let us proceed one step farther and find our depth of focus using the above illustrations. We multiply our hyperfocal distance expressed in inches by the distance of the object in inches. To find the distance in front of the principal object which is sharp we divide the above by the HFD (hyperfocal distance) Plus the distance of the object in inches and to find the distance beyond the object equally sharp we divide by the HFD minus the distance of the object in inches. Taking our examples in order and using an object distance of 50 feet or 600 inches. Our five inch lens with a circle of confusion of $1/100''$ would give all objects sharp from $25\frac{1}{2}'$ to $1250'$; with a c. of c. of $1/500''$ objects would be sharp between approximately 42 feet and 62 feet. With our two inch lens and a c. of c. of $1/500''$ our object would be sharp between $22' 4\frac{1}{2}''$ and infinity. Our two inch lens with a circle of confusion of $1/750$ th of an inch as found in our highest type of miniature camera lenses would give a very sharp image of all objects between $27' 5\frac{1}{8}''$ and $282' 8''$. From these illustrations we can readily see the great advantage of the miniature camera lenses of short focal length.

When we deal in lenses with speeds of $f:2$ or greater we can readily see the importance of the short focal length lens. Our two inch lens with speed of $f:2$ focused upon an object 20 feet distant will give an image sharp to $1/500''$ between $16\frac{1}{2}'$ and $26\frac{1}{2}'$ feet meaning that all objects $3\frac{1}{2}'$ feet in front of the sharpest plane of focus and $6\frac{1}{2}'$ feet behind would be really sharp. Even if we could secure a $6''$ lens with a speed of $f:2$ capable of producing a circle of confusion of $1/500$ th of an inch we would find that objects only within the narrow limits of about five inches in front and seven inches in back of the plane of sharpest focus would be sharp within the limits set, only one foot. Such a lens would be valueless. Of course your answer to this lies in the fact that the six inch focus lens would cover a larger negative with consequently less diameters in enlarging thereby permitting the use of a greater circle of confusion for the same size print. This is correct but if you will trouble to figure out the problem with the given formulae you will soon find that the six inch focus lens suffers by comparison and is of little value.

The modern precision miniature cameras are generally supplied with a depth of focus scale for each lens of different focal length and this is a desirable feature. You are able to focus without computation so as to secure the best possible results in your finished prints. The importance of depth of focus is realized more and more as we use our little camera. When attempting, for example, a "shot" of a dancer in the theatre, using our $f:1.5$ lens it is of the utmost value to know the depth of focus or in other words how near or how far may the dancer approach or recede from the distance we have set our focus so we may still get a sharp image in our negative. To know that if the average

distance of the dancer is 30 feet she may move $6\frac{1}{2}$ feet towards the camera or $11\frac{1}{2}$ feet back a space of 18 feet.

Circles of Confusion. We have mentioned and partially explained circles of confusion in the foregoing paragraphs we need spend but little additional time or space in discussing them. The size of these depends upon the correction of the lens for spherical and chromatic aberrations. Along the optical axis the lack of sharpness is caused chiefly by these aberrations while the lack of sharpness in the remainder of the field is caused by a combination of these with coma, astigmatism and curvature of field. It is not so difficult to correct the defects upon the axis but when we depart from this the difficulties become great. An increase in speed adds to the manufacturer's troubles. It is not so difficult to make a lens with a speed of f:8 in which the aberrations along the axis are reduced to a minimum and those in the remainder of the field amply corrected. It is generally conceded that the finest lenses are those sharp at their full opening and which do not have to be "stopped down" to secure maximum sharpness. "Stopping down" should increase the depth of focus but to a certain point not materially affect the sharpness. We reach a point, however, in stopping down when the circles of confusion become greater due to the diffraction of light by the diaphragm. Much depends upon the type of construction of the lens.

No lens can be sharper than the smallest circle of confusion or as it is sometimes expressed the circle of least confusion for which it has been corrected. Just what the size of the circle of confusion is in the plane of sharpest focus is not supplied by the manufacturers. Probably this is due to the misunderstandings that might arise for these circles are smallest along the optical axis and increase in size on each side with each minute of arc. We must be content with the manufacturer's statement when he says that within a definite number of inches or feet his lens will give circles of confusion of $1/500$ th or $1/750$ th of an inch.

So far in our discussion of lenses we have considered the optical qualities with a view of clearing away certain confusion and misconceptions held by many photographers. We now turn our attention to the more practical side of the subject and for this purpose divide our lenses into two general classes (1) Universal and (2) Special purpose. The latter class will be further subdivided in our discussion into a. speed, b. long focus, and c. wide angle lenses.

(To be continued)

Part three on lenses will be concluded in the October issue. In that installment Mr. Pepper will discuss specific lenses, and there will be illustrations showing the construction of many of them.—Ed.

Cinema Section

Edited by

William A. Palmer

Don't Over-Emphasize Cine Technicalities!

Hal Mohr

Winner of the 1936 Academy
Award for Cinematography

Personal movies furnish a varied service to camera owners. Movie making can be a fascinating hobby in which one concentrates on the many tricks of technique and the gadgets which may be purchased and made. Again filming may furnish pure recreation without the complexities of "advanced" cinema technique. Movie making is fun and sometimes is most valuable if not taken too seriously. Still again movies can be of service, even though the actual taking of the pictures does not give much pleasure, for movies make the most satisfactory form of family history.

Obviously this department is concerned primarily with discussing out-of-the-ordinary tricks and effects which can be put into amateur movies. We are anxious to give as many ideas as we can for gadgets and special home made equipment so that personal movies can be more vital. We may give the impression at times that one should hold his head in shame who has not his basement full of title stands, developing drums, and filter sets.

Lest we get to the point of seeming fanatical in our elimination of simplicity, we are printing this month some advice from one of Hollywood's foremost technicians. Hal Mohr is unusual in the ranks of first cinematographers, for he directs pictures as well as photographs them. He is on intimate terms with every complicated dodge in the profession, but read what he thinks about personal filming:—ED.

CINE-TECHNICALITIES, like football, can very easily be over-emphasized. It's all very well to have a thorough grasp of the technique of movie-making; but when the mechanics of lighting, filtering and so on lead folks to forget the fundamental fact that home movies are made for pleasure

—for the purpose of getting pictures that are fun to make and fun to screen—it's time for somebody to register a protest.

I say this from personal experience as a home-movie maker. Several years ago, when I bought my first Cine-Kodak, I started off using my 16mm. outfit just about the way I'd use my 35mm. Mitchell in the studio. There wasn't even the difference that my home movies weren't talkies, for my 16mm. baptism came some months before I was assigned to photograph "The Jazz Singer". I took as much trouble with each of my 16mm. scenes as I would with a scene from a studio production. Of course, I didn't have the same generous supply of lights and reflectors, nor did I have a big crew of "juicers" and "grips" to manage them; but I tried, on its more limited scale, to handle my camera with 100% professional technique.

Technically speaking, it worked: my pictures were good examples of technique. But from the viewpoint of pleasure—the real criterion of home-movie-making—my first pictures were an utter flop. They were too darn stiff and formal; I'd worked so hard on the technicalities of making them that I'd robbed myself—and my audiences—of much of the pleasure of real, spontaneous *home* filming.

There are a lot of amateurs, I am sure, who are undergoing the same experience. As a professional Cinematographer, I get a good deal of what would be called (if I were an actor) "fan mail". Most of it comes from 16mm. and 8mm. enthusiasts: and aside from the recurrent query, "How can I become a studio cameraman?", most of these letters ask me to answer questions on camera technique. Between the lines, all too many of them reveal that their writers are thinking too much about the *how* of making movies, and not enough about the *what* and *why* of it.

After all, the picture's the thing: filtering, lighting, and all the other tricks of the trade are (or should be) just tricks to help us in our main job of getting, pleasing, *natural* pictures. And if we let these tricks pre-empt our attention, it is very likely we'll forget to think about keeping our pictures natural.

Take the matter of filters, for example: if you're a technique-hound, you can very easily get lost among the forest of filters that are available. I've had letters from amateurs who told of having a battery of fifteen or twenty different filters—and who wanted now to know how to use them! Just owning a lot of filters is no more a passport to good pictures than is the possession of an expensive camera. The real thing is knowing how and when to use them. And the more surely one knows, the smaller grows one's assortment of filters.

For most of the sort of home-movie making you or I do, two or three filters will be more than ample; and a set of six filters will enable us to meet any problem that we might meet, with any type of film from Ortho to SuperPan. Reducing things to the simplest terms, select a K-2, a G, and a 23-A. The yellow K-2 will give a fairly strong correction on Ortho or Plenachrome film, and a fair effect on Pan. The orange-yellow G will give a strong correction (darkening the skies strongly) with Plenachrome or regular Pan, and a mild correction on Superpan. The light red 23-A will give an extreme over-corrected effect (with black skies) on regular Pan, and a moderate degree of correction—with skies greyed enough so clouds stand out well—on Super. Thus with three filters you are ready to cope with practically anything that may come up.



Hal Mohr standing beside his big Mitchell studio camera and an old camera which he made when a boy in San Francisco. Mohr used the old camera to film local news events for a theater run by Sid Grauman's father. On the Mitchell camera you will notice the tape measure which is used religiously by Hollywood cinematographers for close-up focussing. The camera, which is buried in the "blimp" or sound-proofing, has a visual focussing device, but it is usually so much trouble to open up the "blimp" for each shot that the focussing scale is used instead. The visual focussing is used for very accurate work, however.

on any film. But if you want to go in for more subtle distinctions in your filtering, you might add the Aero 1, the Aero 2, and the K-3. The Aero 1 will give a very mild correction; the Aero 2 will give you approximately a normal correction; and the K-3 will give a very full correction on regular Pan, though it is of very little use on Super. And if you want extreme over-filtered effects on Superpan, you might use a 25-A, for with this heavy red filter (its factor on Superpan is $4\frac{1}{2}$) you can, by juggling your exposure, get everything from heavy over-correction to a real night-effect.

Indoor filming is another thing which can too easily become unnecessarily complicated. Of course you need light to shoot movies indoors—but with Superpan film and the fast lenses available now, it doesn't by any means have to be *artificial* light. On a normal, sunny day, the light from a window, aided by a reflector which throws back enough illumination to lighten the shadow side of the subject, is all that one needs for very satisfactory interior movies. And when I refer to a reflector, I don't by any means specify the professional, foil-covered variety. An ordinary, white bedsheet, held at the right angle, will do excellently—and a projection-screen, which is rather more reflective, will do even better. Don't try to use a mirror, though, for it will give you an unpleasantly "hot" beam of light which can't be controlled easily; and all you need is a little, soft illumination.

If you use artificial lighting, a couple of Photofloods in good reflectors will do wonders. Incidentally, I've had lots of letters from amateurs who complained that their interior scenes looked too flat: the answer is simply that they've lit them too flatly—probably with one lamp squarely on each side of the camera. If you have but two lamps, place them one on each side of the camera, right enough, but *unevenly*—one nearer the subject than the other. In this way, you'll have a high-light side and a shadow side, and you will get a certain roundness from the interplay of shadows. If you have two lamps, one a single unit and the other a twin-lamp one, place them evenly: the stronger ray of the twin unit will give you the uneven lighting balance you need.

In the studio, we use two tricks to give the effect of roundness and depth. One of them is back-lighting the actors: this, properly done, outlines the figure in light so that no matter what the background may be, the figure never merges into it. The other is contrasting the different planes of the scene in lighting, keeping one light, the next dark, and so on. This, too, tends to keep the picture from merging into a flat monotony. Both of these tricks can, to a certain extent, be applied to home filming. Very often you can achieve them without having to use extra lighting units, merely screwing a Photoflood or two into the regular lighting fixtures in the room.

There are a number of useful little dodges which make filming easier and more certain. For instance, if you make it a habit always to put your camera away with the lens focused at 25 feet, and stopped down to f:11, you can be confident that you'll get a passable scene if you have to bring the camera into action in a hurry. It's a life-saver if friend wife sometimes borrows the camera! Again, with a box type of camera like the Cine-Kodak, if you are caught in the field without a tripod, you can improvise one by using the shoulder-strap from your carrying-case: simply loop one end of the strap around the camera, let the other end hang down to the ground, and step on it with one foot. If

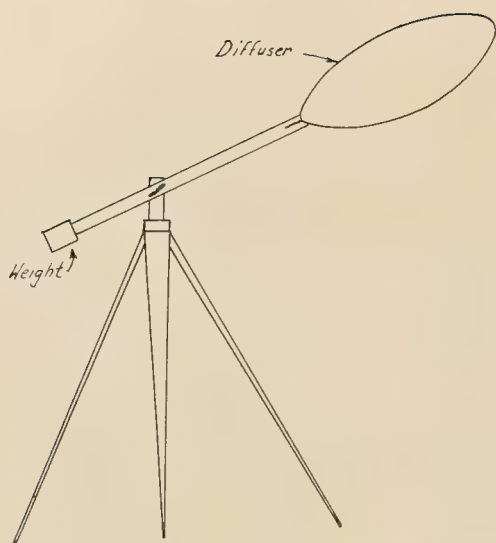
you hold the camera so as to keep the strap taut, you'll find that the tension steadies the camera almost as well as a tripod.

When you're traveling, it is a good thing to use 50-foot rolls rather than hundreds, for you can have the film developed oftener, and run less chance of losing valuable scenes through the film's deterioration. I had a good lesson in this a few years ago when I visited the Fiji Islands. I took fifteen rolls of black-and-white film, but when I made my shots, I forgot the fact that it was going to be several weeks before the film could be developed, and that it would travel through many variations of temperature and humidity before reaching the laboratory. My exposures were perfect—but my pictures weren't. For during the time that elapsed, the variations in temperature and climate en route home acted on the latent image just like a developer, so that when the film was actually developed, most of the silver particles had been used up, and there was little left to reverse into a positive image. Only in a few shots made under very bad conditions—and thus hopelessly underexposed according to ordinary standards—did I get much. So if you are going to film in the tropics, far from a processing-station, remember and underexpose!

Diffusing Sunlight

RISKING the raised eyebrows of Hal Mohr and his followers who prefer simplicity, we are going right back into our old habit of describing another gadget, this time a rather bulky one. But remember we don't claim it to be indispensable, although it is good idea for the technique hound.

We have spoken in the past of the use of reflectors for outdoor shooting when one wants to put sunlight where shadow is. So valuable can this use of a reflector be that it is almost worth making a hard and fast rule never to take a Kodachrome close-up in the sun without a reflector to illuminate the shadows. The improvement in the appearance of the color scenes is well worth the inconvenience of carting a reflector around. A reflector will also help with a black and white picture although the improvement is not so startling as in color. The only objection to the use of reflectors from the standpoint of the



The Sunlight Diffuser

subjects is the intense glare that results from a combination of the untempered sunlight from above and the added "sock" from the reflector. It often becomes very difficult for one to face such lighting without squinting.

The solution of the problem of adequate soft light for cine close-ups without objectionable glare is the use of a sunlight diffuser. This rather formidable gadget is invariably included in the equipment of the Hollywood cinematographer on location. It consists simply of a hoop of heavy wire or steel rod about four feet in diameter covered with a single thickness of cheesecloth. This disc of cheesecloth is fastened by its frame to one end of a length of 1" x 2" lumber, the piece being about five feet long. On the end opposite to the diffuser is affixed a weight to serve as a counter balance. This assembly, looking something like a huge tennis racket, is mounted on a tripod or other suitable stand through a hole placed two feet from the weighted end. If a tripod is used, a small angle of iron, threaded to fit the tripod screw on one of its legs, will form a vertical flat surface to which the arm of the diffuser can be attached and held in place by a bolt and wing nut. Constructional details, of course, can be varied at will. The important point is to be able to support the diffusing disc of cheesecloth above the heads of the persons being photographed.

In use, the diffuser is placed so that its luminous shadow falls on the face of the actor or actors. This will give a pleasing illumination of facial features without the annoying harsh triangular shadow under the nose and the dark eye sockets. Care must be taken, however, to see that the background is not too light in comparison with the faces. If the background is in sunlight, it should be dark in color such as green foliage. If desired one can use reflectors in conjunction with the diffuser for back or side lighting. In this case the reflectors should be "soft" being coated with flat white surface rather than the "hard" aluminum paint or tinfoil generally used.



"Sunset Bay"

Fletcher O. Gould

Advanced Medal Print

■ Let us first pay tribute to this picture as a fine photograph, exposed, developed and printed to perfection. So accurate is Mr. Gould's technique that he has maintained at least four distinct planes in the distant mountain ranges. In all probability this delicate distinction will not survive the reproduction process, but we assure the reader that it's all there in the print.

The picture is a fine expression of the atmospheric and emotional qualities peculiar to the early morning hours and it is this that makes the picture pictorially successful. The three dark foreground objects are placed in the picture space just as nicely as one could wish, and we can see only one small weakness in the composition. This concerns the bright area of the sky. It will be noticed that this bright area runs out of the print at the right and in so doing establishes a point at which the roving eye may slip out of the picture. This is not a serious fault as we see it but the composition would be strengthened if there were slightly darker tones toward the edge of the print.

Data: 4 x 5" Graflex; 1/25 sec. at F:16, 5:30 A.M., on E. K. Portrait Pan.; print on Defender Rough Luster.

Second Award

Advanced Class



"Work of the Desert Winds"
R. W. Brewer

■ Sand dune pictures must depend to a great extent upon the beauty of a single leading line, and upon fine rendition of textures. Mr. Brewer has all that one could hope for of the first quality, but his textures are not quite so perfect due principally to a falling off of focus in the foreground. Observe how important the shadow at the right is to the success of the picture. Without this the eye would surely slide down the inclined bank of sand and out of the picture at the right. The shadow however stops any such movement. The shadow therefore performs its function of giving base and stability to the composition admirably, but considered as a line it is not quite so successful. This because it parallels the dominant line too closely, too perfectly. This shadow line should function in the same way as the secondary part in a musical duet. By the bringing out of subtle variations of the melody, harmonies are created that add much to the appeal of

the music. To carry on the analogy, a too obvious parallelism of curving lines such as appears here, creates a situation similar to both parties to a duet playing only the melody.

Data: 4 x 5" Graflex; 8¼" Zeiss Tessar; 1/10th sec. at F:22, on S. S. Pan. in D-75; Agfa Brovira Royal, in D-72.

Third Award

Advanced Class

■ Mr. Monsen offers us a very beautiful print and a carefully selected scene that is certainly typical of desert regions. One might wish that the two cactus trees were not quite so even as to height, but this is not a serious drawback since the one on the right definitely dominates because of its more interesting characteristics. What does bother us is the way the shadowed portion of the foreground spreads across the picture in an even dark band, unrelieved by any variety of contour. If, for example, we could have some light in the lower left behind the cactus tree, the contour of the shadow area would then curve in from the lower left, and this contour would set up a leading line that would take the eye into the picture. As things are the shadow area is rather forbidding and acts as a hurdle over which the eye must struggle to gain entrance to the picture.

Data: 4 x 5" Korona View; S. S. Pan., in D-75; print on E. K. P.M.C. #11, in D-72; partially toned. 11 x 14" prints on 14 x 18" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Encroaching Shadows"
Shavenau Monsen

Fourth Award
Advanced Class

■ This is an interesting picture but a rather confused one from the standpoint of composition. The welter of lines present no organized pattern so far as we can see, with the result that the observers eye does not move through the picture in a planned fashion but jumps hither and thither. The purpose of composition is to avoid just that. It would appear that there is too much included in the picture space. The shadow of the rope ladder at the left of the print is not tied in with the rest of the picture in any structural fashion and consequently it can readily be dispensed with. The loop of rope at the upper right was evidently included on the theory that the large and peculiar shadow of it needed explanation. There is something to be said for that idea, but in this case, because of the peculiar nature of the shadow the eye constantly jumps back and forth between rope and shadow seeking an understanding of its unusual characteristics, of size and shape. This condition really makes the shadow dominate the figure which in the present circumstance hardly seems proper. Consequently it seems best to trim in from the left until the first group of rivets at the top edge of the print are eliminated, and down from the top enough to remove the two uppermost rungs of the rope ladder. Such trimming simplifies the composition by eliminating non-essentials, and as a result the figure gains in strength.

No data.



"The Scaler"
Glenn D. Beer

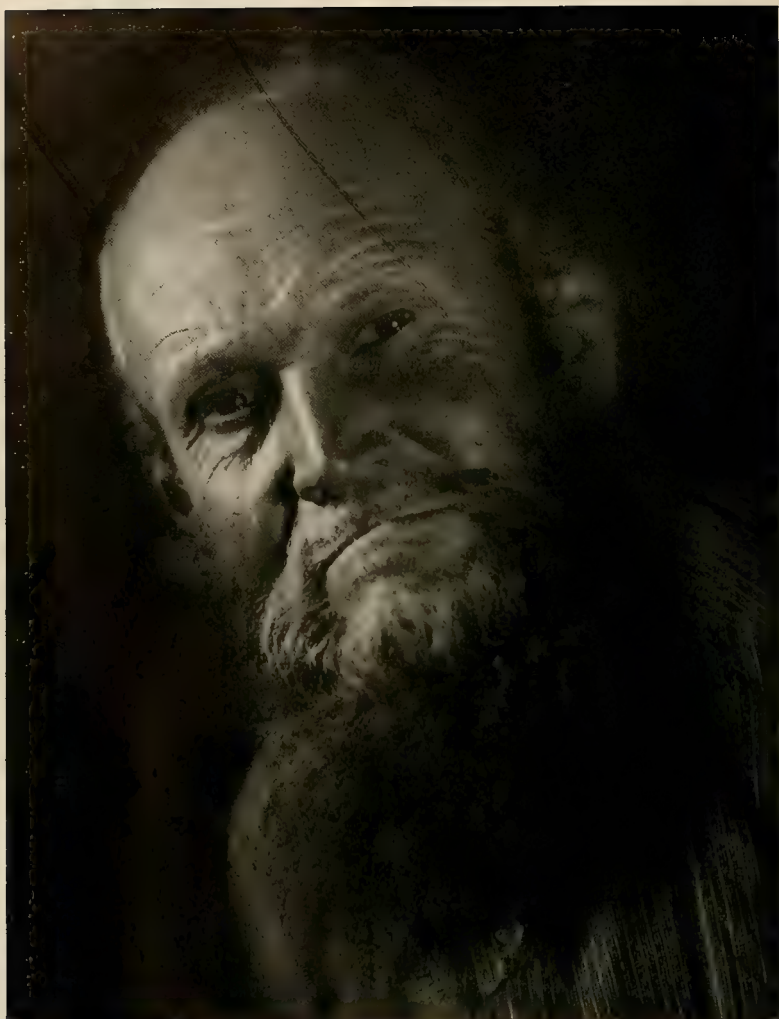


"Straws"
Ruth Bernhard

Fifth Award
Advanced Class

■ Miss Bernhard has discovered rather original subject matter for this still life and has arranged her material in interesting fashion. Perhaps it would help to have included a few more straws placed so that their ends would appear at about the center of the print for there is a slightly weak area there. By this we mean that there is a rather abrupt transition from the lower group of straws showing dark ends, to the upper group of straws, which because of their position do not have that characteristic. This might be remedied by the above suggestion. The print appears to be trimmed unnecessarily close especially at the base. We definitely object to the bowl resting exactly on the edge of the print.

Data: 8 x 10" Eastman View; 12" Turner Reich; 15 secs. at F:32, on Defender X.F. Pan., in Pyro; combination of photo-flood and daylight; Haloid Apex Glossy #2, in D-52. 8 x 10" prints on 12 x 15" mounts may be obtained at the price of \$15.00 upon application to Camera Craft. Prints will be exchanged with other prize winners only.



"Prophet Manning"

J. Owen Campbell

Amateur Medal Print

■ Mr. Campbell appears to have handled his interesting subject with considerable skill. The lighting is well planned but we would like to see just a little less light on the forehead, which looks pretty "hot", and just a little more on the lower part of the beard so that its outlines would not be lost. The head is well placed in the picture space but it needs more support from the base. This is a shortcoming that is often found in portraits with the head leaning in as this one does. The lack is easily corrected by posing the model with (in this case) the right arm slightly away from the side so that the blank space at the lower left of the print is filled in. This must not be carried too far, of course, and the clothing should be arranged so that there is no open gap between arm and body. It will usually be necessary to turn the shoulders slightly more toward the camera to carry out such an arrangement. In close up shots such as this that will be to the advantage of the picture for it will prevent the far shoulder from appearing too small as it does in this case.

Data: Speed Graphic; Carl Zeiss F:4.5; 1/10 sec. at F:8 with two photofloods in reflectors; Agfa Super Plenachrome in D-76 for 45 mins.; E. K. P.M.C. #11. Prints will be exchanged with other prize winners in these competitions only.

Second Award

Amateur Class

■ It is evident that Mr. Rosenthal clicked his shutter at just the right moment to catch this horse in an attitude which brings out all the grace and strength of a beautiful animal. Our only criticism concerns the clouds. It is evident that these are printed in, not because of any manipulative clumsiness on the part of the maker but because the cloud negative is too soft for the printing paper used, with the result that the clouds cannot be printed up without going too dark. Consequently they appear flat and unnatural. Further, the cloud form selected is not a particularly happy one. It is a too obvious repetition of the pyramidal form of horse and rider. This is especially evident about the rider's head. It is desirable to have clouds **suggest** the principal structural form, but literal duplication is not suggestion. We must always leave a little to the imagination, and achieve our effects with subtlety. An obvious trick is no trick at all, merely an annoyance.

Data: Leica; 35 mm. lens; E. K. Panatomic in D-76; Multiple printing on Defender Velour Black I, in D-64.



"Guidon"

J. S. Rosenthal

Third Award

Amateur Class



J. K. Trafton

print where the movement of line terminates could have tied in with this point the composition would be strengthened. The only serious weak spot in the composition is found at the top of the print where the curve of the U-shaped bar is interrupted and, slightly beyond that point, where the upper outline is lost against the background. There is a definite tendency for the eye to slip out at that point. We doubt if the

(Continued on page 461)

Fourth Award

Amateur Class



"Study"

Frank Navara

is nothing radically wrong with composition or technique that the picture must be good. They expect a critic to tell them what to do to their particular picture in order to transform it into a masterpiece. Obviously that is seldom if ever possible. The critic can only express his personal opinion as to how close the picture comes to full realization. He can never create pictures for others.

Data: 4 x 5" Korona View; 12" Doppel Corectar; 40 secs. at F:18, on Gevaert Ortho, in M. Q. Borax; Defender Velour Black J; by light of Everready flashlight (2 batteries).

Fifth Award

Amateur Class

■ It seems to us that the maker saw something rather nice in this scene, and that he failed to obtain a full realization of what he saw because his subject matter played a mean trick on him. A fully experienced photographer would probably have noticed the difficulty before making the shot. Mr. Gutleben should be glad he made this picture for there is no better way to learn to watch for such things than to have them pop up at you unexpectedly when the print is made. We refer to the fact that background material has come forward in the picture and appears out of its proper plane. The foliage in the largest gap between the trees is in reality immediately behind these trees and in shadow. Consequently it has photographed very dark. But because its actual position is not readily apparent it gives an observer the impression that the distant trees have come forward in the picture with a resulting confusion of planes. The remedy would have been to tear that foliage out before making the shot, or possibly to stop down so that the near foliage would be sharp and consequently distinguished from the more distant trees.

Data: Foth Flex; E. K. Panatomic in DK-76; E. K. P.M.C. #11, in M. Q.



"Patriarchs of the Forest"
Theophil Gutleben

Monthly Competitions

Scoring for Club Trophy Cups

The following won points for their clubs in the advanced class: Glenn D. Beer and Ruth Bernhard, for the Los Angeles Camera Club; Fletcher O. Gould, R. W. Brewer and Shavenau Monsen, for The Pack Rats.

The following won points for their clubs in the amateur class: J. K. Trafton, for the Golden Gate Miniature Camera Club; Theophil Gutleben and J. S. Rosenthal, for the Miniature Camera Club of Oakland; J. Owen Campbell, for the Norfolk Photographic Club; and Frank Navara, for the Pictorial Photographers of America.

Contributing Clubs

Aluminum Camera Club (New Kensington, Pa.)	Japanese Camera Club (San Francisco)
Amherst Camera Club (Mass.)	Los Angeles Camera Club
Austin Camera Club (Texas)	Miniature Camera Club of Oakland (Calif.)
California Camera Club (San Francisco)	Minneapolis Camera Club (Wisc.)
Camera Club of Long Beach (Calif.)	Norfolk Photographic Club (Va.)
Camera Club of Ottawa (Canada)	The Pack Rats (Pasadena, Calif.)
Camera Club of Richmond (Va.)	Photo Pictorialists of Milwaukee (Wisc.)
Ellensburg Photographic Club (Wash.)	Photographic Society of San Francisco
Fort Dearborn Camera Club	Pictorial Photographers of America
Golden Gate Miniature Camera Club (San Francisco)	Redlands Photo Pictorialists (Calif.)
Green Briar Camera Club (Chicago)	Toledo Camera Club (Ohio)
	Washington Pictorialists (D.C.)

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club.....	28
Los Angeles Camera Club.....	14
Pictorial Photographers of America....	12
Photographic Society of San Francisco.	7
Montreal Camera Club.....	2

Small Clubs Advanced Class

The Pack Rats.....	41
Whittier Camera Club.....	3
Washington Pictorialists.....	2
East Bay Camera Club.....	1

Large Clubs Amateur Class

Golden Gate Miniature Camera Club...	18
Photographic Society of San Francisco...	11
Pictorial Photographers of America....	11
Miniature Camera Club of Oakland....	10
California Camera Club.....	7
Camera Club of Ottawa.....	3
Miniature Camera Club of Detroit.....	3
Miniature Camera Club of New York...	2
Brooklyn Edison Camera Club.....	1

Small Clubs Amateur Class

Omaha Camera Club.....	8
Riverside Camera Club.....	7
San Jose Camera Club.....	7
Norfolk Photographic Club.....	6
Washington Pictorialists.....	6
Redlands Photo Pictorialists.....	4
Camera Club of Long Beach.....	3
Calgary Y Camera Club.....	2

(Continued from page 459)

picture would be improved by adding space at the top but believe it would help to add a narrow black border and separate the tones between bar and background at the upper right.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Auto Graflex; Bausch & Lomb Tessar; $\frac{1}{2}$ sec. at F:22, on E. K. Panatomic in D-72 for $4\frac{1}{2}$ mins.; these estimated as 50% of normal exposure and 50% over-development; Agfa Proofing paper, in T-1, 1 to 3; partially toned.

Notes and Comments

The National Salon of Photography

The Oval Table Society, Inc., announce the National Salon of Photography to be hung Nov. 1-15, 1936 in the Vanderbilt Gallery of the American Fine Art Society. Last day for receiving prints, Oct. 6, 1936, entry fee, \$1.00, limit four prints, open to residents of the U. S. A. only. Interesting feature of this well organized exhibition which promises to become one of the really important American shows is that there will be both a Pictorial and a Scientific section, and that these will be judged by separate juries. Up to four prints may be submitted in each division. Firms or organizations may exhibit in the technical section but only individuals may enter in the pictorial section. The exhibition will be hung in one of the most beautiful galleries in this country, that regularly used by the National Academy of Design. Entry blanks may be obtained by addressing Oval Table Society, Inc., 10 West 33rd St., New York, N.Y., or by sending a three cent stamp to this magazine.

Philadelphia Art Alliance Exhibition— Jury Will Criticize All Prints

Photography takes another major step toward complete recognition as a Fine Art with the announcement that the Philadelphia Art Alliance will hold its first photographic exhibition from Oct. 26th to Nov. 10th, 1936.

The Philadelphia Art Alliance has long been recognized as one of the finest and most discriminating exhibiting organizations in this country and consequently it is particularly gratifying that photography will henceforth have a place on its program of exhibitions.

Rules for the exhibition disclose some innovations. Most important and encouraging to the exhibitor is the promise that all prints whether accepted or not will be returned with the written criticism of the jury attached to the back of the print. Entries are limited to two prints per ex-

hibitor. Prints which have been exhibited previously in America are barred, the entry fee is \$1.00. Blanks may be obtained from the Philadelphia Art Alliance, 251 So. 18th St., Philadelphia, Pa. We are sorry that we cannot state the last day for receiving prints at this time, but exhibitors should obtain their blanks promptly since the closing date must be early in October at the latest. This is an exhibition which because of its fine backing and its very evident interest in the welfare and education of the exhibitor, deserves your unqualified support. Important artistic organizations can only give photographers the opportunity to show what they have to offer. After that it is up to the photographers.

Winners of the Kalart Synchro-Sunlight Contest

In our July issue there appeared an advertisement with the heading "How Was This Picture Made"? Readers were invited to mail in their explanations and three prizes were offered for the best answers. We are proud to report that the number of good replies were so great that The Kalart Company, sponsors of the contest have increased the number of awards to twelve. Writes Mr. Morris Schwartz, president of the company: "The number of correct replies is highly gratifying, indicating that the majority of readers of the Camera Craft magazine understand the possibilities of photoflash when synchronized with a camera shutter." Incidentally Camera Craft for Oct. will carry an interesting article on Synchro-Sunlight Photography. Each of the winners listed below receive a Kalart Speed Flash listing at \$11.25.

Alfred M. Fisher, Route 1, Box 136, Stockton, Calif.

John Dolan, Roosevelt Field, Mineola, L.I.

H. W. Abbott, 430 Chestnut St., St. Marys, Penna.

Judson B. Niece, 7 Myrtle Street, Boston, Mass.

John T. Welbourn, 820 Parkside Avenue, Mt. Lebanon, Penna.

Dr. Wallace Rogers, President Atlanta Camera Club, Methodist Episcopal Church, South Oxford, Georgia.

T. S. Franklin, Jr., 1114 Commercial Bldg., Charlotte, N.C.

Austin C. Lescarbours, Croton on Hudson, New York.

S. M. Shalett, 1012 McCallie Avenue, Chattanooga, Tenn.

Fred P. Peel, 601 W. Ninth Street, Chester, Penna.

Roger A. Hart, Newberg, Oregon.

John D. Lockwood, 2710 Cathedral Avenue, Washington, D.C.

For Women Only

In June, having finally been educated to the realization that a Camera Club was a grand place to talk shop, I decided to join one. Accordingly, I got in touch with Mr. Thomas O. Sheckell of the Orange Camera Club and I was really shocked to learn that the Camera Club had in its Constitution a clause—NO WOMEN—Mr. Sheckell was courteous, friendly and regretful but still the clause held good—NO WOMEN. The Newark Camera Club was called—NO WOMEN.

The next day I hid myself to the newspapers with an announcement of the formation of a Camera Club for both amateur and professional women, the first meeting to take place two weeks later. The papers gave the story a lot of space and at the first meeting at the end of June, I had heard from thirty women in and around Newark, and eighteen women attended.

And so the Women's Camera Club of New Jersey has been formed and incorporated and a real need fulfilled. Plans for fall and winter are in the process of being formed and will include lectures, technical demonstrations, print discussions, competitions, etc.

Mr. Sheckell has kindly consented to address the first Fall meeting, which will take place Sept. 15th at 8:30 o'clock in the Patrick Studio, 48 Walnut Street,

Newark. The meeting will be open to those who are interested.

—Pat Liveright.

Kodachrome Film for Still Cameras Announced by the Eastman Kodak Company

Kodachrome film, which has created a sensation among home movie fans, is now available for full, natural-color still pictures.

For the time being, however, Kodachrome for "stills" is limited to two sizes—roll No. K828 (8 exposures) made especially for the recently announced Kodak Bantam Special, Eastman's newest precision built camera with a fast f.2.0 Ektar lens and Rapid Compur shutter. K828 Kodachrome Film is not suitable for use in the f.6.3 and Doublet models of the Kodak Bantam, because the lens apertures of these cameras are not sufficient to give the exposure required in making snapshots.

Another size, K135 (18 exposures) is ready for Kodak Retina and similar miniatures cameras, using 35 mm. film.

Kodachrome provides beautiful, natural color transparencies with the ease of ordinary black and white snapshots. No extra equipment is required for all ordinary "shots". The color is in the film. The full color transparencies can either be viewed in their original size by transmitted light, or projected in large form on a screen. For projecting, transparencies should be mounted in 2" x 2" glass slide. Glass slides, special masks and varied colored binding tape are made available, also a card mount for hand viewing.

If desired, the transparencies may be mounted in a 3¼ x 4-inch slide. Special masks are also available for this purpose. In preparation, and timed for early announcement, is a series of Eastman projectors especially designed for home or lecture showing of the transparencies.

New Willoughby Bargain List

We know that the mere announcement of a new Willoughby's bargain list sends hundreds of alert photographers scurrying after postcards so that they may get their copy without delay. If you have

never had one take our word for the fact that these lists always contain a large number of remarkable buys in cameras, lenses, and accessories. The new list is No. 836 and you should write for your copy right now.

Primarflex

The Primarflex is a single lens mirror reflex making 12 pictures 6 x 6 cm. ($2\frac{3}{4}$ x $2\frac{1}{4}$ ") on a No. 120 roll film. It has a focal plane shutter with speeds up to 1/1000th sec. with self-timer, and comes equipped with a Meyer Trioplan F:2.8 lens of 10 cm. focus at base price, while many other lenses are available up to a maximum focal length of 40 cm. Camera manipulation is greatly simplified by the fact that you can wind the shutter, transport the film by one frame, actuate the automatic film counter, and set the mirror simultaneously by merely turning the winding knob. A note to the Mimosa American Corp., 485 Fifth Ave., New York, N.Y., will bring you descriptive pamphlets showing the many fine features of this efficient "handful" of camera.

The Photoscop

Elsewhere in this issue we announce the fact that the famous Kodachrome film is now available for still cameras. The one most important item in making color shots is that the exposure must be as exact as possible. Mistakes in exposure mean degraded color values. The one way to obtain exact exposure is to use a reliable exposure meter. The Photoscop is a meter that you can rely upon and it has the further advantage of being convenient and rapid in use, since the exposure is read directly from the meter and requires no computation. If you haven't investigated this meter write to Photo Utilities, Inc., 10 West 33 St., New York, N.Y. and they will gladly send you full information.

Photo-Ceramic Art School

Photo-Ceramics is a process about which there appears to be a good deal of curiosity but little knowledge. No up-to-date information is available in books that are in print, and consequently we have been forced to give less than satis-

factory answers to several who have enquired regarding sources of information. We are therefore happy to report the fact that anyone interested in this art may now obtain full instruction from experts in this field. Write to the Photo-Ceramic Art School, 1003 South Halstad St., Chicago, Ill.

Information on Dufaycolor

If you are looking for good reliable information on the processing of Dufaycolor film you need only write to the Defender Photo Supply Co., Inc., Rochester, N.Y., and ask for their free booklet entitled "Color Photography for Universal Use." Here is a color process, giving beautiful full color transparencies which you can carry out in your own darkroom with surprising ease. Write for your copy today.

Flex-a-Pod

The aggravating thing about the Flex-a-Pod is that one never can learn all of the many uses to which this ingenious little gadget can be put. Every time we so much as glance at ours a new way to use it pops into our head. It serves as a tripod that may be used in "still" work for table-top photography, floor shots, and macro photography, copying and in amateur movies for titling, the creation of animated cartoons, and general work. The tilting and panoramic head, which can be purchased separately if you like, provides further utilities. For example it will hold an amateur movie camera pointed almost straight down. Used in conjunction with the other accessories offered by this firm, the Photo Flood-Spot and the Foco-Flood, you have a combination of tilting and panning tripod, and lighting standard which can be arranged in a great number of handy ways. It is almost impossible to give any idea of this gadget by words alone, but the manufacturers have prepared a useful little circular which tells all about it by means of pictures. In this case one picture is truly worth a thousand words. Write to Photographic Specialties, Inc., 129 West 22nd St., New York, N.Y., and ask for this descriptive circular.

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October 1936

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How It Was Done

Adolf Fassbender

A FEW weeks ago a Pictorialist showed me six pencil sketches of prospective pictorial pictures. They were of various subjects. For instance, one of them was a street vendor at a certain corner of a certain street in New York City. A certain type of an old man, full of character, etc. The background was a certain typical New York building, and other things of importance to complete the picture. So were five other sketches, all laid out and planned. He asked me what I thought of them and if they were possible, and if such pictures would be acceptable in salons. Indeed, I said, not only will they be acceptable, but as far as I can see they will be masterpieces. But it will probably be a life's job to produce them, unless the settings can be prearranged, involving great expense, etc. However, the man who plans is doing something. He is active. He uses imagination and, no doubt, such pictures are the ideal artistic creations and are quite often done with portrait studies or still-life, etc. When it comes to street scenes of the above type, when the human element enters, when children, animals, fleeting moments of momentum come into question, the problem becomes a great one. Nevertheless, good pictorial pictures are not only possible, but most unusual and can be artistically rendered. Such pictures, if they are to be successful, are planned and sketched in the mind at the moment of the occurrence.

To take such a picture as a routine matter is exactly where the snapshot ends—where the candid stops, but where the pictorialist begins, not only mentally, but also technically. To grasp the situation at the



Fig. 1

moment and to act accordingly decides the result, and it is at this moment when the imagination must be brought into play, when the composition must be laid, when the technical possibilities must be considered. Of course, it is a task. But things do not come ready made. Oh, yes, the happy-go-lucky snapshotter sometimes accidentally strikes a masterpiece, but the more advanced the worker, the more rare these things become.

The budding pictorialist has his troubles. He is convinced he cannot do it. He thinks he has not the gift like the other fellow. The fact is, he does not yet see that great moment. He is too slow—too late. Of course, he does not realize that there are dozens of things to be thought about at once, when taking a picture. This quick thinking and action have to be learned. So, when the mechanical training of the handling of the instrument (this, of course, includes speed) is accomplished, the technical training begins, and only when the mastery of technique (which takes years) is a fact, the artistic development has a substantial basis and can be acquired with more ease. Then the making of better pictures becomes a habit and habit is based on repetition.

From the above it becomes obvious that after the acquisition of technique, the development, or, rather, the redevelopment, of the imagination becomes the foundation of good picture making. So, we have on one



Fig. 2

hand the imaginative picture, planned ahead with due consideration over a period of time (the vendor, etc.), and on the other hand the imaginative picture to be planned and calculated at the moment of the occurrence. No doubt, the first type is easier to conceive and only difficult to render. The second type is more difficult to conceive on account of the necessity of speed, and also difficult to render because of the great many possible errors involved, which in the long run must tax the technical ability of the pictorialist to the utmost.

If we consider the pictures described above as a standard for artistic pictorial photography we would have to omit a great many accidental pictures from salons. On the other hand, it is the accidental picture which has partly given pictorial photography the great momentum that we witness at the present time. As the accidental only favors beginners, it will continue to spur on more enthusiasm, and then develop more creative talent and with it better pictures in the future.

In the following description of "before and after," it will be shown how a situation must be grasped, how a fleeting moment can be utilized for an everlasting story, a picture. How far removed the accidental can be from what may look to some people like a lucky snapshot.

Preconception

Returning from Nova Scotia on a large steamer, I noticed a great many nuns were passengers. The very fact of their presence made me think of pictures, but what to do with them, photographically speaking, was the problem. Of course, they stayed by themselves. They were shy, reserved, and apparently not camera enthusiasts. Well, that made it more worth while. So, first: Imagination. Three nuns. Where? Oh, perhaps leaning on the railing and looking at a beautiful seascape, with boats, or a landscape along the shores of Long Island Sound. Twelve hours to go. No sketch, but always alert for the moment. All went well. At 5 p. m. three nuns were on the spot, the shore was there, too, but the beautiful scenery failed to appear. Anyway, the picture was taken (number I) thinking of a possible composite. Well, when all was done, what was it, anyhow? No story, no motive, just three nuns who did not seem to belong in a seascape or a landscape.

Conception

At 6 o'clock, nearing the big city, the sky began to cloud up, looking pretty bad for pictures in general. When suddenly the clouds opened up and sun rays streamed through, sending some vivid beams down upon the city in the far distance, the real imaginative moment had arrived. The towers of Manhattan, clouds, rays, nuns, cathedrals, blessings from above, Biblical memories, the Lord blessed his children, etc. What an avalanche of thoughts and possibilities. Camera! Action! There was only one thing left and that was: to put things together. Of course, herein entered the technical problems and pretty difficult ones at that.

First, where are the nuns? Well, there are about six in front of the bridge watching the approach of the marvelous city, which was bathed in a strange evening haze with low-hanging clouds. Now, some rays of light fall upon the higher buildings and some other towers that stretch up to the heavens like cathedrals. Nuns, cathedrals, rays with blessings—how wonderful! Here goes an exposure, a safety shot. Who knows whether the nuns will be there in five minutes? Picture number II.

What disorder! No unity. The bridge cutting through and separating the thought, the unity, the blessing—everything. No picture as yet—a snapshot.

Problems

Problems arrive. Night is near. It will be too late. The towers will be too close to be photographed from nearby. There are many nuns. How can I get a group of three? There are rows of people crowding them in; everybody wants to see the wonderful city. We pass under Fifty-ninth Street bridge. The sky is murky, hazy. Light poor, no filter possible. Light possibilities 1/25 at F6.3. The wind blowing; vibration from engines; lack of depth of focus. The bridge at its widest perhaps 15 feet. I lean back to the wall. The Chrysler building, cathedral-like, with nearby Babylonian buildings must be near. My only chance before dark. The sun rays are downtown—technique will adjust that. The people now four rows deep. I whisper, "Please move. I would like to take a picture of the



Fig. 3

nuns." People moving; more whispering; looking. Here is the cathedral—what a sight! I am ready! Keyed up to the highest pitch of excitement. A loud voice: "Come away! He wants to take a picture." The nuns turn around; become scared and rush away. The cathedral is in front of us. I rush up and plead: "Please, Sisters, can't you see the cathedral, the sky, the rays, like heaven blessing the Nuns underneath?" "Yes; how beautiful; but we do not want our pictures taken." "But, Sisters, I will not take your faces, only the veil from behind. Three of you go back and look at the cathedrals downtown where the rays are." (Picture number III.)

The sisters went back; it was all over in a few moments—posing, directing and exposing. But the wind was blowing, forcing the Nuns to hold their veils. The exposure was rather short, due to circumstances. The rays were elsewhere, but not in the picture field. The clouds were too weak and not in connection with the subject matter. So there was plenty of work left to be done via technique. Special developer, forcing, etching and removing hands and arms, recreating the sky as I saw it to fit the mood, via retouching, eventually making a large negative, 11 x 14, to re-balance and remove visible marks due to great magnifications from $2\frac{1}{4} \times 3\frac{1}{4}$ negative.

So here is the data: Camera, Makina, $2\frac{1}{4} \times 3\frac{1}{4}$; lens stop, 6.3; Nuns' distance, 15 feet; focus, 25 feet; no filter; film, Agfa Plenachrome; exposure, 1/25 in hand; developer, Metol-glycin; developing time, double of normal; negative, etched and retouched; sky, worked in on back of negative from nature as it was; transparency, 8" x 10" commercial film; new negative, 11 x 14 on paper; contact print on Tuma Gas; developer, Metol-Hydroquinone-Adurol.

Analysis of the Composition

Due to the closeness of the nuns and background, the picture as seen covers the entire film, which means that the composition had to be arranged at the moment of the taking. Its separation of the cathedral from the other buildings left only one moment when our ship, which was traveling fast, had moved in the given position. A quick leaning over to the right with the camera prevented the center and principal nun from being exactly underneath the cathedral. The placing of the nuns and the cathedral somewhat to the right in order to avoid stiffness and stillness made it necessary to concentrate emphasis of light to the left on top and so create balance. Further balance to the left was brought about by introducing clouds, which at the same time form a connection between the upper sky, buildings and nuns. This is, of course, enhanced by the introduction of the rays from above. The radiating rays centering above should ordinarily be considered as leading away from the subject matter below, but the spirit and mood of the picture is of such divine nature that the emphasis and concentration of light must remain and center above, whence cometh the blessing. Chimneys, water tanks, etc., had to be removed to avoid interference with the Biblical spirit of the picture.

"City, Thy Name Be Blessed."



"City, Thy Name Be Blessed"

Adolph Fassbender

Select Your Focal Length

Fred G. Korth

WHEN an advanced amateur or a professional photographer shows some good prints to a group of interested people such as, for instance, a camera club audience, he is often asked to answer questions about the paper he uses, the film, filter, developer, camera—and what have you. The brand of paper, however, seems to be of prime importance to the beginner and—it's hard to believe—also to many an experienced amateur. Next in importance, people want to learn all his secrets about good films and bad ones. Most likely he uses the same film throughout for a certain class of work and another brand for subject matter of a different nature—all in all, two or three kinds of film for hundreds or thousands of photographs. He may use one particular paper for all contact prints and one or two different papers for all enlargements.

This is simple ABC's to the advanced amateur, and here are his reasons: Almost every film and paper is good. Prices are nearly alike and there is little or no advantage in switching from one brand to another. So, choose your film and your paper and stick to them until you have mastered them and learned all about their qualities and shortcomings. But don't try to make them do the impossible! The temptation to change is strong; since you may buy paper and film every week; but it does not pay—financially or in print satisfaction.

What about your camera and lens? Is your camera as good as that used by Mr. Jones? Does your lens cost as much as that preferred by Mr. Smith? Does it work fast, does it draw sharply, does it cover the right field? How about its focal length?

Now, let it be said that every lens, unless defective, can help you make good pictures. And "help" is all it can do! No lens, camera, film or gadget ever made a picture. It's the person behind the camera who makes it. Some people do good work with box cameras while others do the most horrible kind of thoughtless snapshooting with very intricate and costly outfits. Whether you own a 50-cent lens in a box camera or an anastigmat that costs hundreds of dollars, you have to learn how to use it. You must learn what it will do and what it cannot do. Yes, a lens as expensive as an automobile has its limitations and shortcomings in addition to its qualities. And it is of real importance to use your lens with discrimination before the paper or developer need worry you. No paper can improve the sharpness of your image, and no developer can ever change an unfortunate angle of view.

Since cameras and lenses are not bought every so often, it pays to choose this kind of basic equipment with great care. Consider its usefulness and practicability first and above all. Some workers do their best with conventional reflex cameras, others with miniature apparatus, and still others prefer the good old standby with ground glass back and double extension bellows. Some like curtain shutters for speed, while others can't live without the Compur and Compound. At any rate, a camera with facilities to change lenses is best, even if all your savings can buy but one lens with it. There may be the desire later to get an additional lens of longer or shorter focus. A good camera should not be extra large, extra small or extra costly. It will, in all probability, be one of the least expensive items of your photographic pastime or profession, anyhow. But a good camera is one that, given reasonably good care, will still be in perfect working condition long after you've used up film and paper worth ten times its original cost.

What constitutes a good lens? Certainly speed, alone, does not make it. Many amateurs buy lenses with apertures of $f:1.5$ or $f:2$, only to use a stop of anywhere between 3.5 and 16 for 97 out of 100 exposures. Those 3 per cent of speed shots often constitute stage or night photographs of very dubious merit. So—why pay so much for a lens that is heavier, but not better for most worthy pictures?

One of the first considerations must be given to the focal length of the lens. For head and shoulder portraits you need a longer focus than for street scenes. For interior views in close quarters, a very short focus—that of a wide-angle—is necessary. Given a final enlargement of 8×10 in. from a camera size of anywhere between $24 \times 36\text{mm}$ to 5×7 in., you cannot depend upon the diagonal or longer edge of your negative to define what is a "long" and what is a "short" focus. The shorter edge, in most cases, is the guide because here nothing can be added to the negative to make up the final measurement of 8 inches. If somebody thinks his 50mm lens in a $24 \times 36\text{mm}$ camera is a relatively short focus, he is



12 cm.



24 cm.



36 cm.

mistaken. This is more than twice the length of the shorter edge and, therefore, would compare with a $16\frac{3}{8}$ -in. lens for an 8 x 10 camera. It would be as long a focus, roughly, as a $10\frac{1}{4}$ -in. for a 5 x 7, an $8\frac{1}{8}$ -in. for a 4 x 5, a $7\frac{1}{4}$ -in. for a 9 x 12cm or a $5\frac{1}{4}$ -in. for a $6\frac{1}{2}$ x 9cm—if 8 x 10 enlargements are the goal.

Ordinarily, however, most cameras come with a shorter lens, which is again not short enough for wide-angle work and not long enough for head portraits and a lot of other things. No lens of a certain focal length will do everything, just as no camera is truly as universal as some advertisements may try to convince you. Your favorite camera with a comparatively short focus lens will do many things, especially if your negative is large enough to permit big enlargements of small portions without loss of definition in those cases where a long focus would have been preferable. However, unless you are just going out for subject matter of one kind, it is good to have additional lenses of sufficiently different foci.

The illustrations reproduced here were specially made for this article with a 5 x 7 camera. In each set of three exposures the camera was kept at the same height above the ground. An Angulon f:6.8 served as wide-angle with a focus of 12cm ($4\frac{3}{4}$ in.). For medium focus a Xenar f:4.5 of 24cm ($9\frac{1}{2}$ in.) was used, and for long focus a Symmar f:6.8 of 36cm ($14\frac{1}{4}$ in.). All three shots of the staircase interior had to be taken from one spot, as there was no space to move the camera backwards for the use of a long lens. Obviously, only the Angulon photograph includes enough territory, and neither of the other lenses was sufficient. No 24 x 36mm camera could have been used because a wide-angle of the comparative focal length of 22mm is not manufactured.

In the case of the little statue, the exposure was made from different



12 cm.



24 cm.



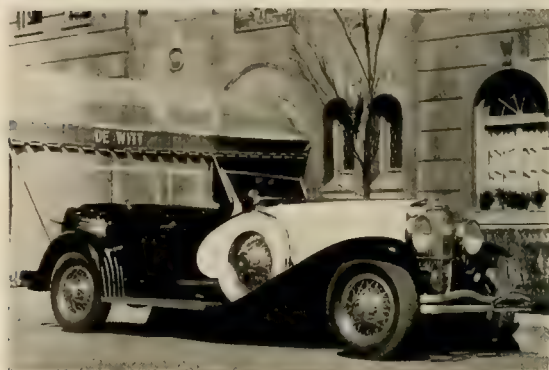
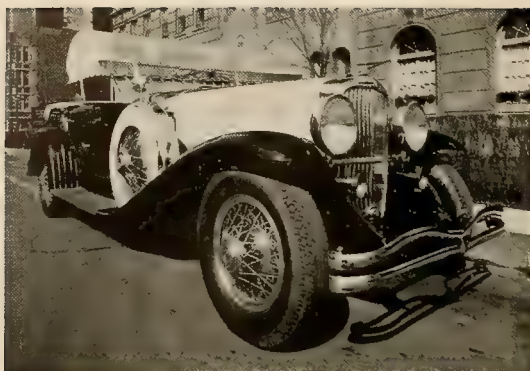
36 cm.

points to show the figures at about identical size. The wide-angle lens foreshortens the proportions of the statue and makes the buildings appear to be very far away. The 24cm Xenar shows the statue and background about as the observer would see them. The long focus lens, however, draws the background too close so that it interferes with the statue. The buildings here appear to be less than the actual 300 yards away.

Advertisers of automobiles frequently complain that photographs make the cars look too short. They often blame photography for this phenomena and turn to drawings to portray the true proportions of their cars. The reason for this seems to lie in the preference given by photographers to shorter focal length lenses. Many times human figures have to be included, so the photographer likes the short lens in order to be able to use a larger diaphragm with quick exposures. Nevertheless, it is the long lens with the camera farther away that gives the automobile its length in the photograph.

In our three examples, the car from rear to front bumper covers approximately the same length on the film. The camera was kept at the same tripod height. Yet, the farther the camera was moved away, the lower and longer the automobile appeared to be. So, the 36mm Symmar was best for showing the length of the car and making the automobile man happy.

These examples take into account only the average case. Fore-shortenings and exaggerations may be useful to depict an idea. But then, also, it is well to have lenses of long and short focus to change the true appearance of subjects one way or another. There will rarely be in front of your camera a subject for which two lenses of different focal lengths are equally well suited.



Top 12 cm., center 24 cm., bottom 36 cm.

About Films

Harry Champlin

THE outstanding virtue of the miniature camera lies in its ability to portray stark reality, to catch a subtle, fleeting mood, and the results from these little cameras compare favorably with the impressions recorded by the eye.

Too many miniature camera photographers appear to lose sight of this fact, too many do not seem to realize that standards have changed and that photography is upon the threshold of a new era—frank, candid, impressionistic works, and out of which will come something fine.

One of the chief causes of mediocre results is the incorrect use of film. The miniature camera photographer has such a vast assortment of sensitive material at his command that he is usually at a loss to know exactly what type of film is best suited to his individual photographic needs. The choice of a film for use in the little cameras is usually based upon either fine grain or speed, and all of the other qualities which the various emulsions possess are ignored. This accounts for the miles and miles of awful negatives that emerge from the compact developing tanks.

The selection of a film should be based upon several factors—the lighting, the predominating colors, the speed necessary to stop motion, and the effect desired in the finished print. To be the master of any photographic situation the photographer should know whether to use an orthochromatic or a panchromatic emulsion, with a slow, a fast, or a hypersensitive speed rating; or perhaps he should use a slow color-blind emulsion, or an infra red. Each type has certain definite characteristics and is therefore superior for one particular branch of photography.

Orthochromatic film is sensitive to ultra violet, blue, green, yellow and orange light. The greater portion of the sensitivity lies in the invisible and visible violet and blue bands of the spectrum. Consequently, this type of film best portrays early morning mists; shafts of early morning sunlight piercing the shadows of a woodland scene; landscapes containing a predominance of greens and yellows; architectural subjects, and

the delicate gradations of a baby's skin. The mists and early morning sunlight contain a preponderance of blue light and because the film is highly sensitive to this blue it will appear as a light or white tone in the finished print. Orthochromatic film is sensitive to the complete green band of the spectrum and it therefore records the greens of a landscape exceptionally well. Should the landscape contain yellows and show much of the sky, then a yellow filter such as an Aero 2 should be used. This filter will reduce the sky from a white to a light grey tone and will lighten the yellows considerably. Architectural subjects usually contain very little color and an orthochromatic film can be used for this work. A baby's skin, on the other hand, is largely pink and red; this is darkened slightly and all of the modeling and gradations are retained. Orthochromatic film is not generally suited to portraiture of grown people because it magnifies all of the blemishes in a face. This would necessitate considerable re-touching.

Orthochromatic films are usually finer grained than panchromatic films. Care must be taken in developing these films because they are capable of giving great contrast.

Agfa Plenachrome and Eastman Verichrome are excellent examples of Orthochromatic emulsions.

Positive films are sensitive to the visible and invisible blue and violet only. These films are for black and white copy work, for photographing machinery, etc., where there is no color, and for making positive transparencies for projection. These films are slow, extremely fine grained, and are capable of giving maximum density and contrast.

Eastman Kodak Company, Dupont and Agfa all manufacture excellent positive emulsions for the motion picture industry.

Infra Red films are sensitive to the invisible red portion of the spectrum. This type of emulsion is invaluable whenever it is necessary to penetrate haze and photograph extreme distances. Blue is made to appear black in the finished print because no blue rays are allowed to pass through the almost black filter necessary in the correct use of this film. Hence all blue will be entirely eliminated and the lens of the camera will see and record objects far beyond the range of the human eye. This film can also be used for moonlight effects in daylight—a black sky with all green appearing ghostly white, as if showered with moonlight. Green trees all give off a certain amount of infra red light; this effects the film and appears as white in the finished print.

Infra Red film is moderately fast but the filters necessary in correct use are so heavy that very long exposures are required.

Agfa Infra Red, Dupont Infra D and Eastman Infra Red will all give excellent results.

Orthochromatic, Positive and Infra Red films should be used for special effects. They are not general purpose films. Each is blind to a certain portion of the spectrum and a correct monochrome rendering of all colors in a scene cannot be made.

The motion picture studio placed great demands upon film manu-

facturers. Films had to be sensitive to all colors; some had to be hypersensitive, with a high red sensitivity for shooting indoors under artificial light, while others had to be slow, with an exceptionally fine grain and strong contrasts, so that the enormous enlargements used for backgrounds on sets could be made from the standard motion picture film.

Modern panchromatic emulsions are the results of the combined efforts of all film manufacturers to comply with the motion picture studio demands. They are sensitive to all colors. Some have a speed rating, heretofore believed impossible. Others have the fine grain and contrasts necessary in background work. Some are extremely red sensitive, while others are a little less sensitive to red and a little more sensitive to green.

Panchromatic films created for background work are special films with a very fine grain and a great potential contrast.

This type of emulsion is invaluable for copying colored originals, for photographing architectural subjects, and for all work where there are excessive contrasts. This film can be used for any photographic subject where speed is not a consideration. It is superior to any orthochromatic type for architectural subjects because it is sensitive to the entire spectrum and for this reason it is possible to gain any desired effect through the use of appropriate filters.

These films are not as fast as they are generally rated. Shadow detail is the criterion of film speed and to gain full shadow detail it is necessary to expose longer. The density and shadow detail of a negative is the result of exposure and the contrast is the result of development. It is possible to gain full shadow detail through proper exposure and to prevent blocking of the highlights by proper development. These emulsions should not be developed as long as the ultra rapid types, in fact, they should be fully developed in exactly one-half the time required for the faster films. Background emulsions should be thoroughly understood by anyone attempting to use them. This is the only type of film recommended by the writer for use in the redwood forests of Northern California, where the contrast range is from $\frac{1}{4}$ in the shadows to 1000 in the highlights and with the greater portion of the scene down around 6. By correct exposure and development it is possible to make a presentable picture of these majestic forests. This same procedure is followed when photographing any scene in which there are full contrasts—full exposure and normal development.

Agfa Finopan and Eastman Panatomic films are representatives of the background type of emulsion. Finopan is slightly finer grained; Panatomic is about fifty per cent faster.

There are three representatives of the ultra rapid type of panchromatic emulsion made in America—Eastman Super X, Dupont Superior, and Agfa Superpan.

Eastman Super X is a hyper-rapid panchromatic emulsion and a splendid contribution to photography. In this emulsion the blue and green bands are a little stronger, while the red has been slightly depressed. Super X is excellent for landscape work, for marines, for outdoor por-

traiture and work under artificial light, and its tremendous speed permits photographing under the most adverse light conditions.

Too much emphasis has been placed upon the speed of this emulsion and not enough upon its other characteristics. For example, the green sensitivity is sufficient to assure excellent results when shooting landscapes; the greens will not be too dark and the separation between the green of the foliage and the blue of the sky will be very pleasing. In marine work the film will show all of the delicate tones of the water and still retain full shadow detail in boats and buildings and other objects about the waterfront. Portraiture in daylight will show nice values in the flesh tones. This film has all of the well-known advantages of fast panchromatic emulsions when used under artificial light.

Dupont Superior is a hyper-rapid panchromatic emulsion with almost the same speed as Super X and is a remarkable film for the miniature camera worker. The color sensitivity is a little less at the blue end and a little higher at the red. Portraiture under artificial light, desert scenes, candid camera work in cities, and the striking effects of red filter work are all shown to best advantage with this type of emulsion.

The high red sensitivity of Dupont Superior makes this emulsion very rapid under artificial light and it will penetrate the shadows in portraiture nicely. Desert scenes are composed mainly of reds and blues and very few greens. This film can be used to advantage when photographing the Grand Canyon. Candid camera work in cities requires an emulsion that will give full shadow detail without blocking up the highlights.

Both Super X and Dupont Superior are really soft gradation panchromatic emulsions of the highest order. A minimum exposure will record full shadow and highlight detail; contrasts in the highlights is gained through prolonged development. Hence the miniature camera photographer is able to shoot at speeds heretofore believed impossible and with an assurance that both highlight and shadow detail will be retained.

These films cannot be overexposed because there will be an immediate loss of contrasts and all tonal values.

Agfa Superpan has somewhat the same sensitivity as Dupont Superior and is an excellent film for all around use. The contrast is a little steeper and the film should not receive quite as much development as either Super X or Superior. Exposures should be a trifle longer.

Agfa Superpan is a fine portrait film with an excellent tonal range. It is splendid for work from the air because it has a little more contrast. In landscape work it should be exposed a little longer, to allow for the greens, and development should be curtailed slightly. This will give a perfectly graded, excellent printing negative. Marine photography will also show this film to advantage. The grain is a little finer than either Eastman Super X or Dupont Superior.

The writer has used all of these films and a great many of the European films and, in his opinion, films made in this country are actually superior to those of foreign manufacture.

Synchro-Sunlight Photography

Morris Schwartz

BEAUTIFUL and novel lighting effects have been obtained by a group of New York photographers who have evolved a new outdoor lighting technique from an adaptation of Hollywood movie practice.

Inspired by the strikingly beautiful results obtained through the use of powerful floods and spots as supplementary illumination on sunlit studio lots, these photographers set out to perfect a parallel system practicable for the average still camera worker.

The result of these efforts is now known as "Synchro-Sunlight" photography, which is based upon the use of the synchronized photoflash bulb in conjunction with daylight. With this technique amateur and professional alike can create a wide range of new lighting effects without benefit of power lines—simply by taking the photoflash synchronizer outdoors into the sunlight!

According to the workers who have developed Synchro-Sunlight photography, the technique is simple, and good results can be obtained by anyone whose camera is equipped with an efficient synchronizer. The standard equipment used in most of the experimental work was a 4 x 5 Speed Graphic camera fitted with a Kalart speed flash, but larger or smaller cameras in any of the endless varieties which can be used with a synchronizer are equally well adapted to the work.

The chief distinguishing feature of the Synchro-Sunlight picture is the use of the sun for strong back and top lighting, while the speed flash preserves full detail in the dark foreground and front of the subject. Another striking feature is the absence of distracting detail in the background, and the manner in which distance objects are silhouetted against a perfectly rendered sky. The reproduction is made from a straight print, entirely free from dodging, retouching or other manipulations.

At first glance it might seem that similar photographs could be made with the "open flash" technique, in which the shutter is opened, the photoflash set off, and the shutter closed by separate manual operations. How-



Typical "Synchro-Sunlight" Picture

ever, the sky and background are likely be overexposed during the relatively long period which the shutter remains open, and the backlighting of the subject will be greatly intensified.

Other applications of Synchro-Sunlight photography immediately suggest themselves. Remember those mornings last winter when we woke to find everything covered with a fresh new fall of snow? Beautiful picture material, but more than likely a dull sky and diffused, characterless light robbed the snow of shadows and visual texture. What pictures would have been possible with a strong, well-directed light source—such as a synchronized photoflash—to throw long shadows exactly where wanted. Dull and hazy days at the beach this summer will present the same problem, and Synchro-Sunlight technique can be your solution. Then there are those hard-to-render, long-scale forest scenes with brilliant sun splashes across the sombre floor of a thick woods. With a synchronized speedflash to light up the darker areas we can get plenty of woodsy detail and texture and avoid chalky contrast in the sunlit patches. Countless other uses of this effective new technique will be found by the ambitious worker.

It seems that the time has come for those who own suitable synchronizers to regard them as part of the regular daytime photographic equipment. As for the rest—well, it's just another reason for getting that speedflash outfit we have always wanted, anyway.

Practical Miniature Camera Photography

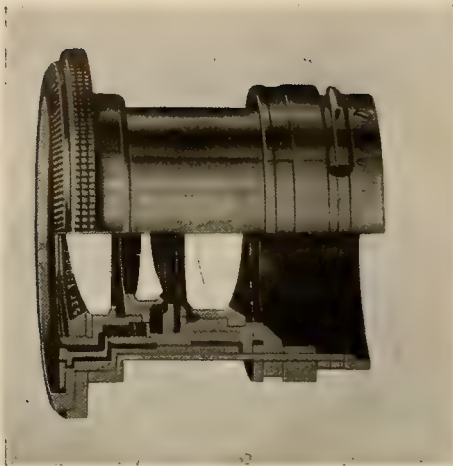
H. Crowell Pepper

Part III. Miniature Camera Lenses, Selection and Use

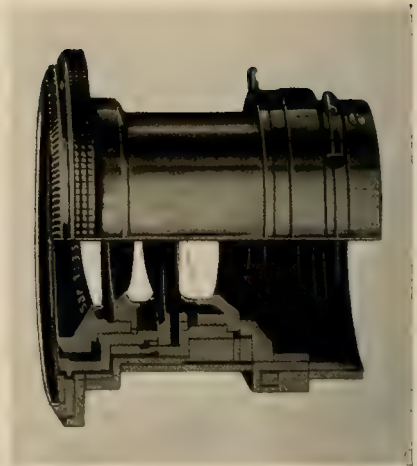
WE shall attempt a brief description of lenses in each class with reference to their construction and use with a view of helping the reader in his problem of selection. My remarks will naturally apply to those miniature cameras permitting an interchange of lenses, and not to those cameras where the type, speed and focal length is predetermined by the manufacturer.

When the cameras of the Contax, Contaflex, Leica, Makina, Exakta and New National Graflex were offered to photographers the question arose whether one needed more than one lens. When this was answered in the negative the next question was why were other lenses offered. After the most careful consideration the lens manufacturer determined the correct focal length for negatives approximately $1 \times 1\frac{1}{2}$ inches to be two inches. These lenses gave the most useful angle of view, about 45 degrees. For the larger size negatives slightly longer focal lengths were used giving about the same angle. Since these lenses served well for the vast majority of subjects they were termed Universal lenses. General purpose lenses would be a much preferable term since they are not universal in the strict meaning of the term. I have been fortunate in securing from some of the manufacturers and distributors of these lenses photographs which give a much clearer idea of their construction than many pages of description. That some makes are not illustrated must not create the impression that they are not worth while or inferior.

I have decided after careful consideration that a better presentation could be offered my readers by considering each make separately. We



Tessar F:2.8, 5 cm.



Tessar F:3.5, 5 cm.

Fig. 1

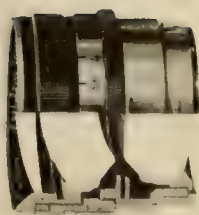
shall consider first those offered by Carl Zeiss, Inc. since that Company presents the greatest number of individual miniature cameras.

The universal or general purpose lens of Zeiss is one named the Tessar. It is fitted in various focal lengths to practically all of their high grade miniature cameras. The most generally used speeds are $f:4.5$, 3.5 and 2.8 . In the illustrations submitted the Tessars are mounted in special mounts for the Contax and while these have been specially computed for the Contax size negative the general construction is the same throughout the series. It is small, compact and light in weight with excellent corrections. It will give a sharp image to the edges of the film at full opening. There is relatively small loss by absorption since there are only six glass-air surfaces. The image is brilliant. It is equally suitable for landscapes, portraits, street scenes, sports, etc. The only problem in selection is that pertaining to speed. Many will be satisfied with a speed of $f:4.5$ while others will wish to take advantage of the faster speeds offered by the $f:3.5$ and $f:2.8$.

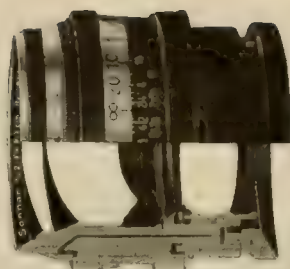
Certain of the Zeiss miniature cameras, such as the Ikomats and Super-Ikomats, use these Tessars. The construction of these cameras is such that it becomes necessary to focus the lenses in an unusual manner, by a separation of the lens elements. I have had many inquiries as to the effect of this method upon the sharpness and quality of the resulting image. Perhaps we can clear up this little matter to the entire satisfaction of all. Ordinarily the lens as a whole is moved to and from the film in focusing. When the focus is changed by separating the lens elements we have only one point where maximum focus is secured at all other points we secure optimum focus. Except, possibly, in scientific work of the most exacting character the optimum focus secured with the above method is sufficient for all purposes. You will never be able to tell the difference in your prints. The Tessar lends itself particularly well to this



Sonnar F:1.5 cm.



Sonnar F:2, 5 cm.



Sonnar F:2, 8.5 cm.

Fig. 2

method of focusing. The truth of these statements is supported by the great popularity of these cameras, many professional photographers using them daily.

Under the heading Special Purpose lenses Carl Zeiss offers ten special lenses. In the speed subdivision we find the Sonnars, the $f:1.5$, $f:2$ of 50mm focus and the $f:2$ of 85mm though I am inclined to place the $f:2$ 50mm Sonnar in the Universal class. Despite its high speed it certainly meets all the tests applied to the slower speed universal lenses and in addition it may be used indoors under artificial light, being well corrected for chromatic aberration, also for high speed Press photography under adverse light conditions outdoors, particularly winter sports. The Sonnars are of a new design comprising six glasses combined so that only six glass-air surfaces result with little loss by absorption and giving sharp definition to the edges of the negative and an even brightness over the entire negative area. The glasses used are large in diameter. At full aperture the lens is fully sharp so little is gained by stopping down except in the depth of focus, but the lens may be stopped down without appreciable loss as a result of the fine corrections for spherical aberration, curvature of field and freedom from coma. These statements apply to all the Sonnars with the exception that the $f:1.5$ may not be stopped down farther than $f:11$. The Sonnar $f:2$ of 85mm focus is of great value when larger negative images are sought giving a 70% larger image than the 50mm lenses. It is specially color corrected and therefore of great merit in color photography and infra-red work.



Triotar F:4, 8.5 cm.



Sonnar F:4, 13.5 cm.



Tele Tessar F:6.3, 18 cm.

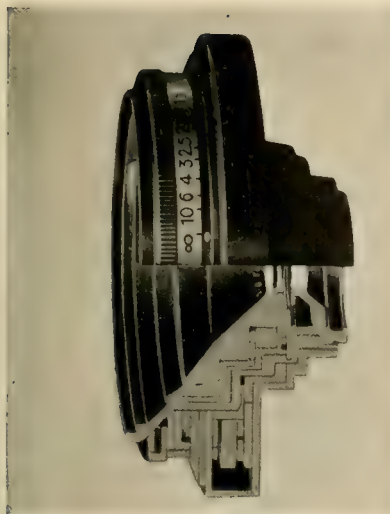
Fig. 3



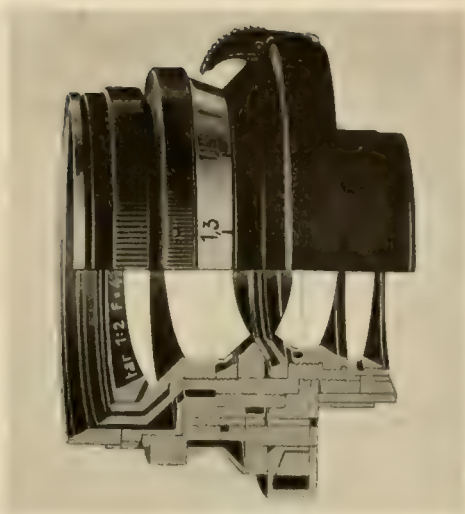
Fig. 4.—F:8, 50 cm.

Turning now to what we generally term long focus lenses we find a wide variety offered by this firm ranging in speeds from f:4 to f:8 and focal lengths from $3\frac{3}{8}$ to 20 inches. You may obtain some idea of the focal length of this latter lens when I say that it is equivalent to a lens with a focus 5' 5" on a $3\frac{1}{4}$ " x $4\frac{1}{4}$ " negative. Beginning with the rather inexpensive Triotar of 85mm focus and a speed of f:4 we find a lens of light build very useful for child studies, portraits and some phases of nature photography. The next step is found in the f:4 Sonnar of 135mm focus a lens of the telephoto type, i.e. one with an negative element giving images nearly three times the size or $7\frac{1}{2}$ times the area of the 50mm (2") lens. It is an excellent lens for distant "Shots" Nature photography, Sports and Press photography. With this lens I have been able to sit in front of the Box seats at the Philadelphia Ball Park half way between home plate and first base and obtain pictures of both bases with images that filled the negative, much to the envy of Press photographers. At the same time I could also obtain large images of plays at second and third bases. I have used the same lens to obtain pictures of Osprey, diving for fish, at speeds of 1/500 and 1/1000th of a second. This is the longest focal length lens that may be used in the hand, longer focal lengths require the use of tripods. Next we have the Tele Tessar with a speed of f:6.3 and a focal length of 180mm ($7\frac{1}{8}$ "). This lens like those previously described, is connected with the range finder. It should be used with a tripod. A lens of great value in nature and distance photography.

Two special long focus lenses are offered with speeds of f:8 and focal lengths of 300mm (12") and 500mm (20"). The uses of these lenses are many and varied. I could tell you of some amusing and



Tessar F:8, 2.8 cm.



Biotar F:2, 4 cm.

Fig. 5

unusual uses. Using the 12" lens with a ground glass for focusing, the latter being coupled with an 8x magnifier I was able to see the color of as seagull's eyes one quarter mile distant. This is no exaggeration but the unvarnished truth. Focusing the 20" lens on a water tank on a building four city blocks distant I could only obtain a view of the peaked roof of the tank which filled the entire negative area.

Wide Angle Lenses. From one extreme to the other, it being a long jump from a lens of 20" focus to one of $1\frac{1}{8}$ " (28mm). The Zeiss Tessar of 28mm focus is a remarkable lens though the speed is only f:8. If we set this lens at 7' focus at its full opening all objects are in focus ($1/500''$ c. of c. from $3' 4\frac{1}{4}''$ to infinity and with a circle of confusion of $1/750$ th of an inch between $4'$ and $25' 8\frac{1}{2}''$). It really requires a stretch of the imagination to fully realize the possibilities of such depth of focus. Standing close to the tip of the near wing of a large Boeing Plane with the lens set at 7' Focus, f:8 I secured a picture of the whole plane. Some remarkable modernistic photographs are possible with such a lens. I cannot close this discussion of wide angle lenses without commenting upon a lens which occupies a double place, a lens with the speed of f:2 and an angle of view of 55 degrees and a focus of 40mm. Neither of these lenses are coupled with the range finder. The Biotar is remarkable for its sharp image, large aperture and covering power. The slight reduction of the image compared with the 50mm lens is fully compensated by the increased angle of view and many workers use the f:1.5 Sonnar and the Biotar in combination rather than the f:2 Sonnar of 50mm.

E. Leitz, Inc. offer the users of the well known Leica Camera quite a variety of lenses, designed to make that camera approach as closely as possible our conception of a universal instrument. There are three of

50mm focus the well known Elmar with a speed of $f:3.5$, the Hektor, $f:2.5$ and the new Summar, $f:2$. The first of these is the lens originally supplied with the Leica and according to figures furnished about 35000 Leica cameras were sold before the model permitting the use of interchangeable lenses was brought out. It is an excellent general purpose lens. The maximum sharpness in the negative prevails when the lens is stopped to $f:6.3$ or $f:9$. The Hektor $f:2.5$ differs in construction from the Elmar and as indicated is considerably faster, about 100%. The lens was designed to aid those Leica owners who needed a lens faster than the then fast $f:3.5$. It is not so sharp at full opening as the Elmar but the makers claim that at $f:4.5$ and $f:6.3$ the sharpness equals if it does not surpass the Elmar. The color correction is an improvement over the Elmar. This lens seems to have been superseded by the new Summan $f:2$ a very fine lens. I have received many favorable reports of the qualities of this lens and it is apparent that it is popular among Leica enthusiasts. In focusing, the special mount supplied enables the necessary movement of the lens without its revolving so that if a "sky-filter" is being used no adjustment is needed. This lens while a general purpose lens may also be classed among the speed lenses. Its speed of $f:2$ is ample for night photography in theatres and at sporting events.

The fastest of all Leica lenses is the Hektor $f:1.9$ of 73mm focus. Though a trifle soft at full opening it is sharper than the 50mm Hektor. This softness which has been mentioned need not deter the owner or prospective owner of a Leica from purchasing any one of these lenses if it meets his or her special requirements. It will not materially affect the fine negatives obtainable with any one of these lenses. The longer focal length of this lens will be appreciated by many, especially those interested in portraiture, since the negative image of the object will be larger than that obtained with the 50mm lenses.

We find an interesting group of long focus lenses offered for the Leica. There are three of the Elmar type, an $f:4$ of 90mm focus, an $f:6.3$ of 105mm and an $f:4.5$ of 135mm. Next we find a lens of the Hektor type of 135mm focus and a speed of $f:4.5$. All of these lenses are of the long focus type and not the type known as the telephoto. Recently this Company introduced a Tele-Objective under the name the Telyt of 200mm (8 inches) focus and a speed of $f:4.5$ (see upper left of Fig. 6). As in all telephoto lenses the distance between the film plane and the lens is shorter than the focal length of the lens. While the focal length is 65mm longer than the 135mm lenses its barrel is only 3.3mm longer. In designing this lens particular attention was given to the corrections for color since the lens would be used primarily for distance work with panchromatic and infra-red film. To make this lens of the greatest value in actual use a special mirror reflex focusing device is offered. It is a dice-like box which is attached directly to the camera containing a reflecting mirror. Focusing is done upon a ground glass through an eyepiece. The latter is supplied with a 5x or 30x magnifier enabling the user to obtain the greatest degree of sharpness. A synchronized release is furnished which operates upon the mirror removing it from the line of



Fig. 6.—The Leica Lenses

the light rays and tripping the shutter. The device is an innovation and will undoubtedly meet with approval. The best results are obtained when used with a tripod. This is true of all long focus or telephoto lenses of a focus greater than 135mm. The reflecting device may also be used with other Leica lenses when equipped with special mounts. When short focal length lenses are used, their use is limited to close-up objects and a special table is furnished giving the ratio of reduction or magnification.

Among the special lenses is a new soft focus lens named the Thambar, shown at right of center row in Fig. 6. Its speed at full opening is $f:2.2$ and its focus 90mm. Offered for portraiture where a soft image is desired it will meet the demands of certain pictorial workers. The lens is different from most soft focus lenses in that it is supplied with a so-called "centre spot"—a disc of optically flat thin glass in a screw-in mount which has a semi-opaque spot in the centre. This spot closes the centre of the lens from all light giving very pleasing definition. The lens may be stopped down to increase the sharpness of the image.

Turning our attention to wide-angle lenses we find the Hektor of 28mm focus and the rather unusual speed of $f:6.3$. Its angle of view is 76 degrees. It possesses great depth of focus and gives a sharp image. Then we have the Elmar of 35mm focus with a speed of $f:3.5$ giving an angle of view of 65 degrees. Thus we complete a rather meager

description of a wide range of fine lenses which the owner of a Leica camera has at his command. When the camera and the special pieces of equipment are considered in conjunction with such an array of lenses, is there any wonder the claim is made that this type of miniature camera is the truly Universal camera?

A few general remarks about the Leica lenses may be of interest to those photographers who take their photography and photographic equipment seriously. The Elmar is comprised of four lens elements one pair being cemented together. This gives six glass-air surfaces. The angles of view of the different Elmars are 35mm-65 degrees, 50mm-48 degrees, 90mm-27 degrees, 105mm-24 degrees, 135mm-19 degrees. The Hektor consists of three pairs of cemented lenses with six glass-air surfaces and angles of view of 28mm-76 degrees, 50mm-48 degrees, 73mm-34 degrees, 135mm-19 degrees. The new Summar is constructed with six glasses the two inner elements consisting of the cemented lenses resulting in eight glass-air surfaces. This type of construction is known as the Gauss type, in which the chromatic aberrations reach a high degree of correction. The resolution of this lens reaches its peak between $f:4.5$ and $f:6.3$. The angle of view is 48 degrees. The Thambar gives an angle of 27 degrees and the new Telyt one of 12 degrees. Though the mounts of these lenses are provided with depth of focus scales a special table is furnished which gives more exact figures based upon a circle of confusion of $1/30\text{mm}$.

Other lens manufacturers offer a wide variety of lenses for use with the miniature cameras now on the market. They range in speeds from $f:4.5$ to $f:2.9$ and focal lengths from a few millimeters to twelve and more inches. Space will not permit a review of these or any comment upon their qualities. I mention them generally because some of the miniature cameras are equipped with them. The Exakta for instance may be had with lenses from four makers including normal focus, telephoto and wide angle. The beautiful Makina ($6.5 \times 9\text{cm}$) distributed in the United States by Photo Utilities, Inc. New York City, is supplied with three fine lenses and supplementary lenses. The general purpose lens is the well known and much liked Anticomar with a speed of $f:2.9$ and of 4" focus. This lens is well corrected and gives sharp negatives to the edges with even illumination throughout. When used outdoors with diaphragm openings of $f:4.5$ or smaller an anti-reflection ring is provided which in combination with the diaphragm opening virtually constitutes a sunken lens shade. For wide angle work the Wide Angle Orthar, $f:6.8$; 7.3 c. m. focus is used. In use the makers advise stopping this lens down to $f:9$ though it may be used at full opening. For distant "shots" one may purchase a telephoto lens called the Tele-Makinar. Its speed is $f:6.3$ and its focus 21 cm ($8\frac{1}{4}"$). This lens is supplied with its own diaphragm so that in actual use the shutter diaphragm must be wide open. When photographing close-up objects with this lens the image is slightly soft and if sharp images are desired they are secured by using one of the supplementary lenses in combination with the Tele-Makinar. The makers of this camera believe this combination of three lenses ample for practically all branches of photography.

In addition to the complete lenses furnished for miniature cameras there are the supplementary lenses of the Proxar and Distar types. The former shorten the focal length while the latter slightly increase the focal length of the lens with which they are used. They are very useful if the construction of the camera will permit their use. With some cameras only the Proxars can be used because of the lack of bellows draw. Some of the twin lens reflecting cameras permit only a slight amount of adjustment of the lens sufficient for focusing the lenses supplied. With these only the Proxars may be used. Where a bellows or its equivalent is supplied with sufficient length to accommodate the Distars they are valuable additions to the equipment. It is important to remember that when these are used they change not only the focal length of your lens but also the corrections and they must be used with discretion. It is always necessary to "stop down" the lens to overcome the optical errors introduced. They possess definite focus and one should inquire of the maker full particulars, giving the make, speed and focal length of your lens as well as the diameter of your lens mount.

In concluding the subject of lenses for miniature cameras I realize the subject has been treated in a rather sketchy way. The more technical problems when considered have been discussed in a non-technical manner. Many questions often asked me touching upon optical principles pertaining to special lenses I have been compelled to omit and must refer my readers to the manufacturers. The majority of my readers will not be interested in other than the practical side of the subject. For those with a knowledge of higher mathematics there has been published recently a very fine book upon the subject of optics to which they are referred. I believe sufficient information has been given to enable the readers to determine what constitutes a good lens, how to make a selection for the type of photography in which they are interested. There remains but the subject of the care of your lens and that we can cover briefly. Do not subject your lens to the direct rays of the sun. Extreme temperature changes are injurious. Do not take the elements from the mount for cleaning or other purposes. They are carefully adjusted when mounted and only the manufacturer should remove and replace them. If the lens surfaces become soiled breathe upon them and gently rub the surface with lens tissue. A scratched lens is generally a ruined lens; the polishing necessary to remove the scratches is often sufficient to change the fine corrections. If the surfaces become oily or finger-marked slightly dampen a piece of lens tissue with xylol and gently rub the surface. Do not place too much upon the tissue. You must avoid any chance of a fluid touching the sides of the cemented elements and affecting the cement used.

Cinema Section

Edited by

William A. Palmer

Making Cine Duplicates

MANY home experimenters like to try processing their own cine films either because they feel that they can save money by so doing or because they enjoy laboratory work with its mixing of solutions and rack-ing of film. If the work gives pleasure, home processing is highly recommended in some cases, but if merely done to save the cost of the expert processing of film manufacturers, it should be discouraged. It is only through the scientific care and machine precision of the big processing plants that amateur movies have achieved such a high quality that now, except for projected picture size, it is possible to rival the photography of the professional studios. Lack of uniformity, the almost inevitable fault of home processing, is a serious difficulty and although it may be a trifle cheaper, if quality suffers there is poor economy. Films exposed in the camera must be right the first time or the scenes must be re-photographed. A choice scene which cannot be re-enacted is too precious to risk in the uncertainty of the home laboratory.

The making of duplicate prints or copies of favorite films is a fine field for experimenting. The duplicates can be made on inexpensive positive film stock which can be handled in a brilliant red or orange darkroom light. Also when making the duplicate one can introduce certain special effects such as fades, lap-dissolves, and wipes as well as correct for certain badly under-exposed or over-exposed scenes and improve their appearance. If any experiment fails in the duplication of scenes, originally processed by a good laboratory, there is little loss and one can always start over again.

The apparatus necessary for duplicating cine film consists of a printer in which to expose the film and a developing rack or drum with its trays or tanks for solutions. There are various types of developing systems for processing cine films. Some use rectangular racks submerged in deep tanks, others hold the film in a spiral roll but permit access of the solution to the emulsion surface, and still others use cylindrical drums around which the film is wound as it is rotated in shallow pans of solution. There are also two general types of procedure that can be followed in making a duplicate from a "master" (The term "master" is given to scenes exposed in the camera and processed by reversal to give a direct positive. The "master", having no negative, is the subject of our interests for duplication). The master may be duplicated by

printing from it a "dupe" negative and then making positive prints from the "dupe" negative. This is a feasible process but one which demands the most extreme care or the duplicate will be a failure. A much better method for the home worker is duplication by reversal. It is this procedure which we are going to describe specifically.

There are several types of processing apparatus and numerous formulae which may be used in the making of duplicates, but we are going to be concerned with one simplified system only which we know to be satisfactory if directions are followed to the letter.

Printing

The printing operation consists of exposing the master in contact with a length of positive film which can be purchased in 100 foot daylight rolls or in 100 and 400 foot laboratory packing. The laboratory packing is cheaper, for the film is not wound on reels and must be handled always in a safe red light.

Printing machines for 16mm film can be purchased but most amateurs find it simple to use a projector or camera for the job. In the January 1934 issue of this magazine the use of a projector for printing film was described in detail and in August 1934 issue a method was outlined for the use of the camera in the same capacity. The use of a projector for printing is usually the most satisfactory, because it is easier to arrange an extra spindle for the raw film. Figure 1 is the general arrangement for using a projector as a printer. The high powered projection bulb is replaced by a low voltage automobile head-light bulb (32 candle power, single filament) and a small piece of ground glass placed between the bulb and the condenser lens. The lamp is operated from a small transformer or from a storage battery and its intensity controlled by a 1 ohm rheostat connected in series with it. The rheostat must be able to take four amperes current without over-heating. If the projector used has no frame or aperture between the lamp house and the film, it is necessary to make one here. (Some projectors have the framer located in front of the film where it will do no good in masking the light while printing.) This temporary masking between the lamp house and the film can be done with little pieces of black paper held in place by "scotch" masking tape. The object is merely to restrict the light from the lamphouse to the area of a single picture.

Figure 1 shows how the films are threaded through the projector mechanism while printing. The projector should be operated at as slow a speed as the motor will operate smoothly and steadily. At this speed the film protection shutter on most projectors will remain closed in the position for showing "stills". Whether the protection shutter remains open or closed makes little difference as long as it does one or the other at all times. But if it tends to oscillate, opening sometimes and closing at others, it should be held still by a piece of wire or other means. One must be careful, however, that the means used to hold the protection shutter still does not interfere with the rotating "cut-off" shutter.

The rheostat for controlling printing light intensity should be equipped with a dial or index so that its positions can be marked or recorded. An ordinary radio dial will serve well. The exposure of the film will have to be very heavy and it may be necessary to operate the 6-8 volt bulb with as high as 10 volts, so it is well to provide a transformer or battery system with a 10

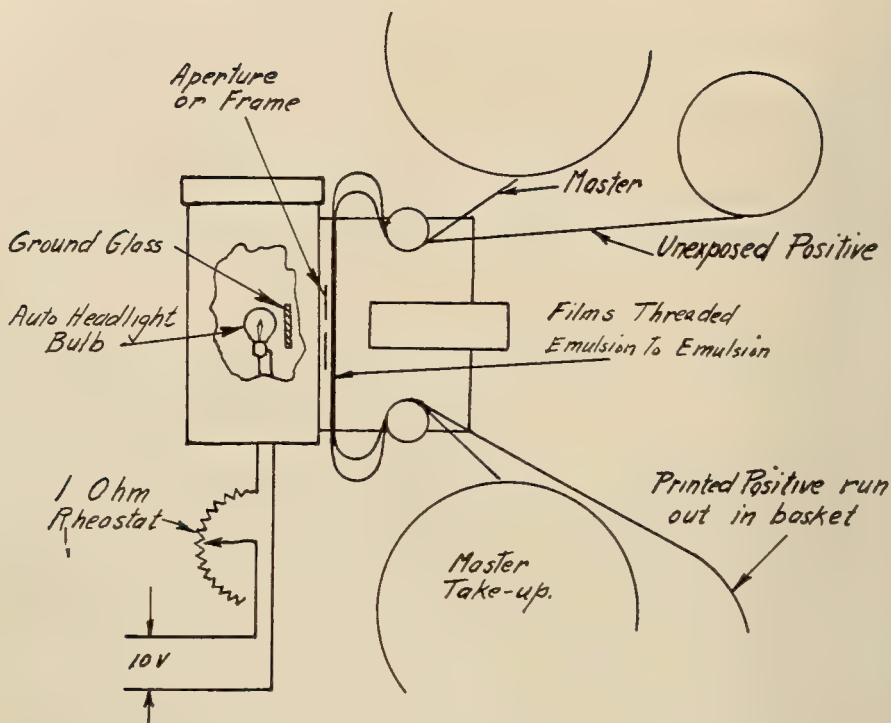


Fig. 1

volt output. The headlight bulbs are very rugged and will burn for a reasonable time on 10 volts.

If short strips of film are to be duplicated (maximum of about five feet) they can be printed in the camera by winding them together with the unexposed positive on the same spool. The two films are threaded through the gate of the camera emulsion facing emulsion with the processed or master film toward the lens and the printing done by the light of a 100 watt mazda lamp held in front of the lens. The exposure in this case is controlled by the lens aperture. The 100 watt lamp should be frosted and the light still further diffuse by a sheet of white "opal" glass held between the lamp and the camera lens.

A test print should be made from a master to be duplicated, exposing a few frames at about ten light intensities from the dimmest to the brightest. This should be exposed on positive film, either plain black and white or colored base. The colored base costs no more than the black and white and is recommended since there is less tendency to halation on contrasty scenes when it is used. The amber colors, known also as "candleflame", are particularly good safeguards against halation. Aside from this feature, of course, the colored base give a novel and interesting screen effect.

Processing

The printed positive film is then processed by the reversal system in the following manner:

A skeleton type cylindrical drum is used which is rotated by hand crank in trays of solution. The drum is made of clean close-grained wood painted with molten paraffine. It is shown in figure 2. The dimensions of the drum

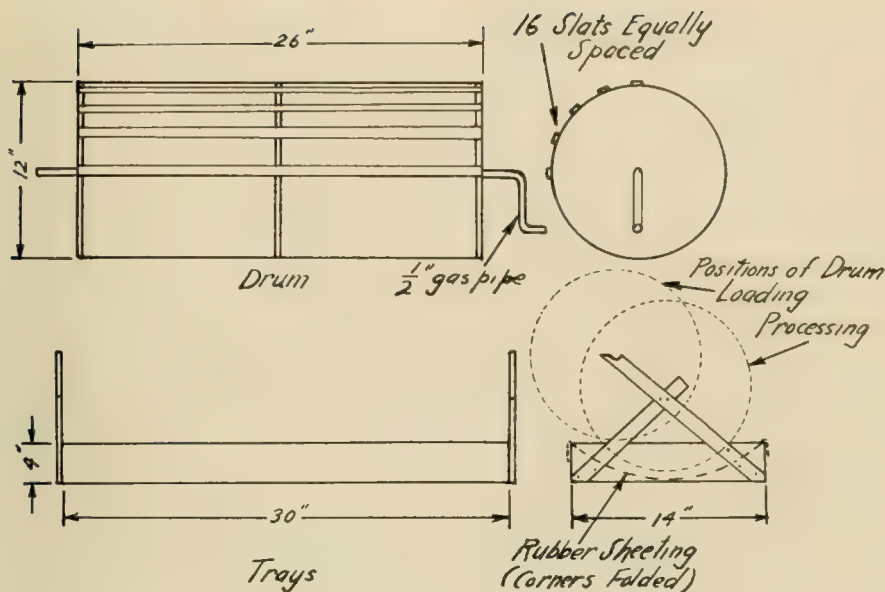


Fig. 2

can be altered at will but those given are convenient for 100 foot lengths of film. A larger diameter is not advisable because there is more trouble with dripping and slopping the solutions outside of the trays.

The trays are merely wooden frames of 1 by 4 inch stock making rectangles 14 by 30 inches inside dimensions. In these frames are laid pieces of rubber sheeting, held in place by thumbtacks. Three of these trays are needed, one which is for washing should be equipped with a drain and mounted over a sink.

The processing requires two solutions, the first being the two part developer:

Part A	Sodium Bisulphite	1 $\frac{3}{4}$ oz.
	Hydrochinon	1 $\frac{3}{4}$ oz.
	Potassium Bromide	1 $\frac{3}{4}$ oz.
	Water	64 oz.
Part B	Sodium Hydroxide	3 $\frac{1}{2}$ oz.
	Water	64 oz.

These two stock solutions can be mixed in advance but are not to be combined until just before use. They are combined in equal parts and development takes five minutes at 65 degrees F.

The other solution is a bleach:

Stock solution:

Water	32 oz.
Potassium Bichromate	1 oz. 340 grains
Concentrated Sulphuric Acid	3 $\frac{1}{4}$ oz.

For use dilute 1 part stock solution in 10 parts water.

The processing is completed in three steps with intervening washing

period. These washing periods are all important in successful work and cannot be mere rinses. The test print and all succeeding duplicates should be processed as follows:

Wind the film on the developing drum by fastening one end to the left side with a thumb tack, the drum being in the winding position above the developer tray so that the drum is well above the solution. The film of course must be emulsion side outward and should be wound while turning the drum away from you (top of drum moving away). The successive turns should be put on with about $\frac{1}{8}$ inch space between. This will not be difficult after a little practice, for the bright red safelight makes it easy to see. (A satisfactory safelight is an ordinary 10 watt red inside frosted mazda.) When the end of the film is reached it is fastened on to the drum with a rubber band which will serve to take up the slack as the film stretches in the solutions.

The drum is then placed in the developer and rotated slowly for five minutes. (Developer temperature 65 degrees F.) It is then transferred to the water bath and washed for at least fifteen minutes.

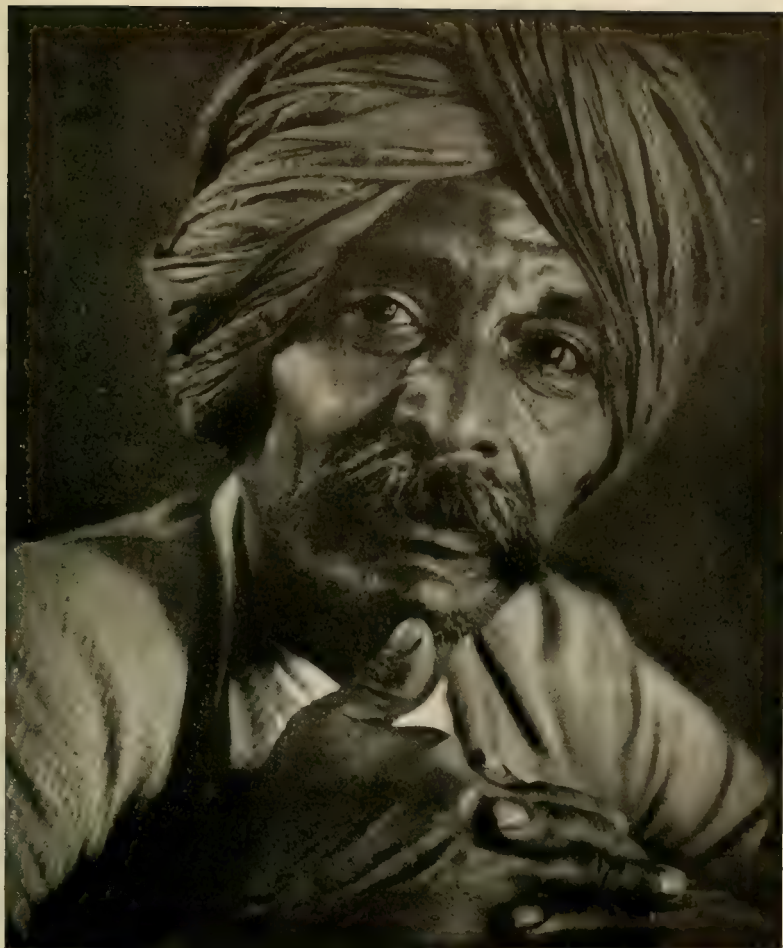
Next the drum is moved to the bleach and rotated slowly for about a minute when subdued white light may be turned on. In this light the completion of the bleaching can be watched as all black silver disappears and there is just the faint orange negative image on the creamy balance of the emulsion. When bleaching is complete the drum is again put back in the water and washed thoroughly, about a half hour with constant rotation and changing water. If the drum is always turned in the same direction as when the film was loaded on it, the slack due to stretching will be taken up on one end by the rubber band. If the rubber band has taken up all the slack it can, it should be stretched out again to a new position.

The film on the drum is then given a thorough light striking by a 200 watt globe in a reflector mounted about four feet above the drum or by bright skylight if convenient. Sunlight should not be allowed to reach the film, however. The fogging is not a critical process, it is merely necessary that all parts be well exposed. Two to three minutes rotation under the lights described is sufficient.

The film drum is then put back into the developer where it darkens rapidly. When the film looks almost completely black and has lost all milky appearance, it is removed to the final wash which should also be thorough. The developer after this stage cannot be used again and must be thrown out.

When the final washing is complete, the drum is suspended out of the water and one end is loosened enough so that the film can be passed through a viscose sponge as the drum is rotated. This removes excess water so that the film will dry quickly and evenly.

The test print is then examined and the proper density of the scene as compared with the master is selected, or if none is just right, a rheostat setting between the two best is chosen and another test made. Once the proper printing light is found, all masters to be duplicated can be printed with this light as long as the same relative densities are wanted on the duplicate. Any control in the duplicate should be done by altering the light in printing and not by changing developing time. Development must be standardized and done always in the same manner with fresh developer. The bleach can be used several times until it becomes too slow in action or greenish in color.



"Ramsingh"

M. Desai

Advanced Medal Print

■ Readers will recall that last month in discussing the picture by J. Owen Campbell which appeared on page 458, we called attention to a weakness which often is found in portraits with the head leaning into the picture. This had to do with a disposition of arms and shoulders which failed to give adequate support to the head. We tried at that time to describe a remedy. If we disregard, for the moment, the inclusion of the hands in this picture it will be evident that Mr. Desai has used just about the arrangement recommended. A comparison of the two pictures will clearly show that the head receives much firmer support in the present case.

From the standpoint of posing we rather like the arrangement of the hands, but object to the fact that they are shown too large in relation to the head. This is brought about by placing the camera too close to the subject in the attempt to get a large image on the film.

Data: Zeiss Ikon Taxo; 1/25th sec. at F:6.3, on Ilford S. G. Pan.; by daylight at 10 A.M.; print on Mimosa paper. 10 x 12" prints, unmounted may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Translucence"
Dr. Max Thorek, F.R.P.S.

F:8 on 5 x 7" Agfa Plenachrome, in Glycin; contact positive on commercial film; enlarged paper negative and final print on Agfa stock.

Second Award
Advanced Class

■ Dr. Thorek has achieved a very charming delicacy in this print and from the standpoint of composition he has established a lovely relationship between the curving lines of the balloon and the vertical lines of the figure. If we must be critical we would call attention to the fact that the brightest accent occurs in the background just to the right of the head, that is to say behind the head. Notice that the tone value of the background on the other side of the head is not so bright. One of the most widely applicable rules for the composition of tone values holds that the greatest contrast between dark and light tones should be at the center of interest. The face of course is the center of interest in this case but since it is turned sharply to the left it would be better to have the brightest background accent at the left so that it would conform to the directional movement set up by the face.

Data: 8 x 10" Studio camera; 1 sec, at

Third Award
Advanced Class

■ Observe the splendid use which Mr. Wadia has made of the foreground shadow to give base, stability and depth to his composition. Our one disappointment with the picture has to do with the fact that the figure of the cyclist is poorly shown. This is due to the use of a shutter speed that was too slow to stop the movement, and to lack of contrast between figure and background. If the cyclist had been caught against the darker background to the right, with enough movement stopped so that the figure was clearly defined it would have improved the picture a good deal by adding life to the scene and providing a strong center of interest which is now not to be found. As things stand there are several points in the picture of about equal strength. We are bothered by the fact that the vertical tower is not quite parallel to the side of the print. This could easily be corrected when making the print or by subsequent trimming.

Data: 6 x 6 cm. Rolleiflex; 1/25th sec. at F:3.5, with red filter, at 11:30 A.M. on E.K. S.S. Pan. Carbon enlargement.



"High St., Lienz, Austria"
D. R. D. Wadia

CAMERA CRAFT

Fourth Award
Advanced Class

■ Unless we are badly mistaken the steam caliope, at least a horse drawn one, is rapidly becoming a thing of the past. Consequently this photograph will soon have historical value in addition to its intrinsic picture interest. We know that there are large numbers of amateur photographers who are pursuing their hobby with something less than complete satisfaction because they have not discovered an objective that stimulates their enthusiasm. They feel themselves not quite suited to the accepted forms of pictorial photography but they plug away at it because they do not know what else to do. Such individuals might well find greater pleasure in their work if they would set themselves to recording for posterity those aspects of our daily lives which are rapidly passing away. The idea of course is to photograph one's subject in action, in its natural surroundings, just as Mr. Kitch has done in this case. The crowd is just as important a part of the picture as the caliope itself. A considerable number of English exhibitions have a section for record photography, and it is to be regretted that American salons have so far failed to encourage work in this field. Obviously there is no hard and fast line between record and pictorial photography. Prints which may be classed as records often have much pictorial merit, as is the case with this picture.

Data: $3\frac{1}{4} \times 4\frac{1}{4}$ " Graflex Model B; $5\frac{1}{4}$ " Kodak Anastigmat; 1/60th sec. at F:11, on E. K. Panatomic in D-76; E.K. Opal A, in D-52.



"Circus Day"
Edward Kitch



"Pattern o' Pine"
Gustav Anderson

Fifth Award
Advanced Class

■ The grouping of the cones is quite nice although ideally one might wish that the two on the right were a bit farther out on the stem so that the groups of two would not be equally spaced from the principal group of three. We also feel that the whole arrangement could be lowered slightly and moved a little to the right in the picture space in order to achieve the best spacing. It may be that the addition of space to the left and top would introduce distracting elements. In that case we would advise trimming about an inch on the 11 x 14" print

from the right side and the base, to accomplish the same end. There is some falling off of tone in the lower right corner which should be corrected in the printing.

Data: 5 x 7" View Camera; 7" Cooke lens; 1 sec. at F:16. on Commercial Pan. film, in D-76; E.K. Opal W, in D-52.



"The Painter"

George Forrester

Amateur Medal Print

■ Mr. Forrester has selected a point of view that secures an interesting distribution of the tree forms and has related his figure to these most successfully. Further interest is added to the picture by the strongly conveyed aerial perspective. The space between foreground and distance is clearly evident. The limb which runs out of the print at the upper left corner is the only hard jerky line in the picture. Because of this it tends to detract from the smoothness of the arrangement as a whole and to call undue attention to itself. For that reason we believe it best to trim from the top until this limb is eliminated. If print proportions are then unsatisfactory we can trim in from the left until the edge of the print just cuts the foliage, without throwing the figure too far to the left. A very little could be added to the base if further adjustment is desired.

Since this is the second first award which Mr. Forrester has won in the amateur class he is hereby informed of his promotion to the advanced class.

Data: Graflex Series D; 6" Zeiss Tessar; E. K. Portrait Pan. film with K2 filter. print on Novabrom. 10 x 12" prints on 14 x 18" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Second Award

Amateur Class

■ The lovely soft modeling which Mr. Looney has achieved in this picture is particularly delightful and eminently in keeping with his pleasant little subject. It might be well to call attention here to the relationship between tonal values and emotional quality in a picture since that relation has been very well maintained in the present print. The tonal values are next in importance to subject matter in establishing the emotional quality of a picture. Perhaps they might even be placed first in importance for we cannot hope to induce an emotion of

peace and quiet of repose as is the case here, if our picture is presented in harsh blacks and whites. Similarly if we wish to convey a strong emotion we must make use of a full tonal scale with strong accents of dark and light. The shoe at the left because of its dark tone and proximity to the edge of the print, tends to call undue attention to itself. Consequently we would trim in from the left about half the distance between the edge of the print and the model's right knee. This eliminates the shoe but still leaves a suggestion of the receding leg, which is as it should be.

Data: National Graflex; E. K. Panatomic in D-76; print on E.K. Opal G. in D-72. 8 x 10" prints on 16 x 20" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.



"Home Work"

Eldridge Looney



"At Eventide"

Helen M. Forster

at 65° F.; 1/50th sec. at F:8, about 6:30 P.M. in August, with light yellow filter; Defender Velour Black A, soft; exposed 35 secs., developed for 2½ mins. in Amidol.

Third Award

Amateur Class

■ Miss Forster has "seen" this picture just right and has photographed and printed it very beautifully. Notice that the elevated position of the camera is very important to the success of the composition for if a lower camera angle had been adopted the boat in the foreground would have hogged the picture and destroyed the effectiveness of the strong leading line. The only condition which one might question is the extreme brilliance of the white prow of the boat in the foreground. This makes it rather dominate the picture, whereas there is really more intrinsic interest in the larger boats and it would seem that these are more desirable as a center of interest. Also with the larger boats definitely dominating the eye moves into the picture with greater ease. Therefore it seems best to dodge in the prow of the rowboat until this is considerably reduced in tone.

Data: 6 x 6 cm. Rolleiflex; Agfa Fine Grain Plenachrome. in DK-76 for 10½ mins.



"Winter Art"
L. Charles-Smith

Fourth Award Amateur Class

■ Mr. Charles-Smith has been most successful in obtaining fine snow texture in this print and the back-lighting adds to the beauty of the picture by bringing out numerous interesting highlights. We are inclined to feel that there is too much in the picture. Observe that the highlight in the immediate foreground has a tendency to catch and hold the interest, and consequently to prevent the eye from moving readily into the picture as it should. We would therefore trim about three inches from the base and about two inches from the right side of the eleven by fourteen inch print. This eliminates the foreground highlight previously mentioned and also a rather busy area in the upper right that has a slight tendency to attract the eye.

Data: Leica F; 35 mm. lens; 1/60th sec. at F:6.3. on DuPont Superior, in P-Diamine-Pyro; 2 P.M., clear day with 2X yellow filter; Defender Velour Black DD. in Amidol.

Fifth Award Amateur Class

■ Mr. Kaplan has caught a fine pose and a perfectly marvelous smile in this shot and if he had only obtained a little better focus in the face this could be made into a very fine thing. As we see it this picture is primarily a portrait, and as such there is a good deal too much in the picture. Unnecessary space about a figure irritates the observer because he feels that he cannot get close enough to the object to really see what he would like to see. It's like trying to look at a small picture from the far side of a large room. It is not necessary to show all that we have here in order to establish the environment. All we need is a suggestion of the ropes in the lower left and part of the cabin against which the figure is leaning. Therefore we would trim down from the top to the lower right edge of the cabin roof; in from the left until only the right half of the shuttered window remains; up from the bottom so that the sloping line of the hull runs out at the lower right, allowing for about an inch trim from the right side on the 11 x 14" print. This reduces the present print to about $6\frac{1}{2} \times 8$ " which is large enough if the small negative will not stand greater enlargement. The shot should have been made with a filter to give more tone to the sky which is now disturbingly blank.

Data: 6 x 6 cm. Rolleiflex; 1/50th sec. on E.K. Panatomic in E.K. Ultra Fine Grain. Enlargement from small section of negative.



"Colored Mate"
George C. Kaplan

Monthly Competition

Scoring for Club Trophy Cups

The following won points for their clubs in the advanced class: M. Desai, for the Camera Art Circle; and Dr. Max Thorek, for the Fort Dearborn Camera Club.

The following won points for their clubs in the amateur class: Eldredge Looney, for the Omaha Camera Club; George Forrester and Helen M. Forster, for the Photographic Society of San Francisco; and L. Charles-Smith, for the Washington Pictorialists.

The following prize winners have no club affiliations: D. R. D. Wadia. Edward Kitch, Gustav Anderson, and George C. Kaplan.

Contributing Clubs

California Camera Club (San Francisco)	Montreal Camera Club (Canada)
Camera Art Circle (Bombay, India)	Niagara Falls Camera Club (New York)
Camera Club of Richmond (Va.)	Norfolk Photographic Club (Va.)
Fort Dearborn Camera Club	Omaha Camera Club (Nebr.)
Golden Gate Miniature Camera Club (San Francisco)	Orange County Camera Club (E. Orange, N.J.)
Green Briar Camera Club (Chicago, Ill.)	The Pack Rats (Pasadena, Calif.)
Hampton Road Photographic Society (Va.)	Photographic Society of San Francisco
Kodak Pictorialists (Rhinelander, Wisc.)	San Jose Camera Club (Calif.)
Miniature Camera Pictorialists of Los Angeles	Victoria Photographic Society (B.C., Canada)
Miniature Camera Club of Oakland (Calif.)	Washington Pictorialists (D.C.)

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club	32
Los Angeles Camera Club	14
Pictorial Photographers of America	12
Photographic Society of San Francisco	7
Montreal Camera Club	2

Small Clubs Advanced Class

The Pack Rats	41
Camera Art Circle	5
Whittier Camera Club	3
Washington Pictorialists	2
East Bay Camera Club	1

Large Clubs Amateur Class

Photographic Society of San Francisco..	19
Golden Gate Miniature Camera Club	18
Pictorial Photographers of America	11
Miniature Camera Club of Oakland	10
California Camera Club	7
Camera Club of Ottawa	3
Miniature Camera Club of Detroit	3
Miniature Camera Club of New York	2
Brooklyn Edison Camera Club	1

Small Clubs Amateur Class

Omaha Camera Club	12
Washington Pictorialists	8
Riverside Camera Club	7
San Jose Camera Club	7
Norfolk Photographic Club	6
Redlands Photo Pictorialists	4
Camera Club of Long Beach	3
Calgary Y Camera Club	2

SUMMARY OF COMPETITION RULES

1. Open to all, amateur or professional, club member or non-club member.
2. Closing date 4th of each month.
3. Place technical data, club membership if any, selling price, and whether or not you wish to exchange on back of print.
4. No entry fees or blanks required.
5. Stamps must be enclosed for return of prints.
6. Full explanation will be sent free on request or may be seen on Page 46 of Jan. 1936 issue.

Club Notes

Forthcoming Exhibitions

The Photographic Society of America One Hundred Print Salon. Address Dever Timmons, A.R.P.S., Salon Secretary, Box 216, Coshocton, Ohio. Closing date October 1, 1936. Limit 4 prints. Entry fee \$1.00. Open to all photographers of the United States, Canada and Mexico, and all members of the Society regardless of residence. Selected prints to be exhibited in the United States and Canada during 1937.

Second Philadelphia National Salon of the Miniature Camera. Address E. R. Baltz, Salon Secretary, c/o Dooner Studio, 1724 Chestnut St., Philadelphia, Pa. Closing date November 7, 1936. Entry fee \$1.00. Limit 4 prints. December 1 to 12, 1936.

Fourth Wilmington Salon of Photography. Address E. W. Sautter, P. O. Box 818, Wilmington, Delaware. Closing date December 15, 1936. Entry fee \$1.00. Limit 4 prints. January 18 to 31, 1937.

Fox River Valley Photographic Exhibit. Sponsored by The Green Bay Camera Club and The Appleton Camera Club. Address Roy E. Scheils, 305 S. Quincy St., Green Bay, Wisc. Entry fee \$0.50. Limit 4 prints. Closing date December 31, 1936. No pictures may be removed from the Exhibit before July 1, 1937. There are two classes in the exhibition, advanced and elementary. In the latter class the print need not be entirely the work of the exhibitor.

First Annual Photographic Salon of the Philadelphia Art Alliance. Address Philadelphia Art Alliance, 251 South 18th Street, Philadelphia, Pa. Closing date October 5, 1936. Entry fee \$1.00, limit two prints. October 26 to November 14, 1936.

International Exhibition of Photography at Lucknow, India. Address Dr. K. N. Mathur, Hon. Secretary, U. P. Amateur Photographic Association, Lucknow University, Lucknow, India. Closing date November 1, 1936. Entry fee 5 Shillings or \$1.25. December 5, 1936 to February 4, 1937.

20th Annual Salon of Pictorial Photography. Address The Secretary, The Camera Pictorialists of Los Angeles, Los Angeles Museum, Exposition Park, Los Angeles, California. Closing date November 15, 1936. Entry fee \$1.00, limit four prints. January 3 to 31, 1937.

Fifth Annual Minneapolis Salon of Photography. Address The Salon Committee, The Minneapolis Camera Club, 2601 Euclid Place, Minneapolis, Minnesota. Closing date November 5, 1936. Entry fee \$1.00, limit four prints. December 1 to 31, 1936.

Tenth International Christmas Salon at Antwerp. Address Mr. J. Van Dyck, Secretary of the Fotografische Kring "Iris", Ballaerstr. 69, Antwerp, Belgium. Closing date November 15, 1936. Entry fee 6 Belga. 1936-37.

The Des Moines Second Annual Salon of Photography. Under the auspices of the Y.M.C.A. Movie and Camera Club of Des Moines. Address Leon H. Smith, Salon Director, Y.M.C.A., Des Moines, Iowa. Closing date December 15, 1936. Entry fee \$1.00, limit four prints. January 1 to 18, 1936.

U. C. Extension Courses

University of California Extension division courses under Mr. P. Douglas Anderson, F.R.P.S., announce the opening of fall sessions as follows:

In San Francisco: School Photography, Thursday afternoons, 4:00 p.m., beginning September 17. In Oakland: Wednesday afternoons, 4:00 p.m., beginning September 16.

Photography Principles and Practise. In San Francisco: Tuesday evenings, beginning September 15. In Oakland: Wednesday evenings, beginning September 16.

Darkroom Technique. In San Francisco: Thursday evenings, beginning September 17. In Oakland: Friday evenings, beginning September 18.

Clubs Please Note

The spreading interest in photography and allied fields is leading toward renewed activities in camera clubs and the formation of many new groups. In the interest of cooperation with camera clubs and other photographic organizations, the Eastman Kodak Company would be glad to hear from such groups; and every attempt will be made to answer inquiries regarding photographic products and general or technical photographic questions.

If the name and address of the Secretary of the club or other individual be given, the Kodak organization will be glad to forward any literature covering timely photographic subjects for study by club members. Whenever possible,

help will gladly be given in arranging programs. Such correspondence, as suggested, should be addressed to the Eastman Kodak Company, Sales Department, Rochester, New York.

New Courses

A new departure in Photographic Instruction is planned by the Photographic Forum of the Art Students League, 166 Geary Street, San Francisco. On Wednesday, September 16 the first meeting will be held at the Artists Cooperative Gallery. The staff of the Photographic Forum will hold a round table discussion of their own photographic work and aims. Their prints will be exhibited and the class invited to participate in a general photographic discussion. This will be a stimulating beginning for the series of 18 weekly meetings. Throughout the course, the students will be expected to bring their work for criticism and constructive suggestions. Interesting Assignments will be given. Each student will receive individual attention, according to his work and his problem.

Each instructor will officiate at three or four meetings and the student will gain a wealth of information and encouragement from the six photographers of the Forum, all of whom are pre-eminent in their respective fields.

The class will be restricted to fifteen members.

Rates:

18 weeks	\$25.00
6 weeks	12.00
1 time	3.00

The instructors are: Ansel Adams, Horace Bristol, Ben Glaha, Imogen Cunningham, Roger Sturtevant, and Dorothea Lange.

Chicago Club School

During the past summer, the members of the Chicago Camera Club have been engaged in the conduct of the Seventh International Salon at Chicago's Art Institute, week-end trips to the Club's summer house among the Sand Dunes of Indiana, and holiday visits to the Zoological Gardens near Brookfield. The regular weekly meetings were resumed in September, and the 1936-37 season is well on its way to be the best yet. The Fall term in the School of Photography opens

October 6 and continues through December 8. As always, Rene S. Lund is chairman of the School committee. The annual Members' Show will be displayed throughout October in the clubrooms at 137 N. Wabash Avenue.

Cleveland School

The Cleveland Photographic Society, Inc., 2073 E. 4th Street, Cleveland, Ohio, announces the opening of their fall and winter season on Friday evening, Sept. 25th, 1936 at 7:30 P.M.

The school which has been conducted by this organization for the benefit of its members during the past eighteen years will re-open on that date and continue through the spring of 1937.

Details can be obtained upon application to the club at the above address. Meetings are held weekly (the year around) on Wednesday at 8:15 P.M., and during the school season on Friday at 7:30 P.M. Club rooms are open every day and evening, and all amateurs or others interested in photography are cordially invited to visit us and get acquainted.

Exhibition

In conjunction with the Metals and Minerals show of the Metal Products Exhibits, International Building Rockefeller Center, a special display of industrial photographs, showing mining and metal working operations has been arranged. The fifty prints shown are the work of Margaret Bourke-White, William Rittase, F. S. Lincoln and Robert G. Richie. The exhibit contains some of the finest work of these photographers, and will be open to the public, from Labor Day until October 17th. There is no admission charge.

The Detroit Miniature Camera Club

At the annual meeting the following officers were elected for the year 1936-37: George L. Schlaepfer, president; I. S. Mendenhall, vice-president; C. B. Phelps, Jr., secretary; C. S. Searle, treasurer. The executive committee is at present working on a program for the season which will be announced in the club bulletin and at the next meeting. The season will open on Monday, September 14, at 8:00 P.M. at the Harmonie Society, 267 E. Grand River Avenue.

Camera Club of the Brooklyn Union Gas Club

Annual election of officers was held and the same officers were reelected: Mr. J. J. Flaherty, President; Mr. A. J. Voorhees, Vice-President; Mr. F. H. Spear, Secretary-Treasurer; Mr. Samuel Grierson, Elected to Advisory Board.

The guest speaker at a recent meeting

was Mr. Edward Alenius, A.R.P.S., whose subject was "Pictorial Photography as a Hobby". Mr. Alenius was very interesting and concluded his talk by showing several of his prize pictures, explaining how each was taken and method of enlarging.

A print exhibition, the work of Mr. A. A. Malgiere of Brooklyn, New York, was shown.

Notes and Comments



John B. Hartnett

New Haloid Executive

Mr. Mosher, President of the Haloid Co., recently announced the association of John B. Hartnett with the Company in an executive sales and advertising capacity. Mr. Hartnett's eleven years of marketing experience were acquired as printing sales manager of The Todd Company, sales and advertising manager of Folmer-Graflex Corporation, and vice-president of Hughes, Wolff & Company.

Eastman Announces New Precision-Made Kodak Bantam Special

With the announcement of the Kodak Bantam Special the Eastman Kodak Company adds further to its line of high-precision cameras designed for the advanced camera enthusiast whose first interest in a camera is its capability to take exceptionally fine pictures under adverse conditions.

With its many built-in features, Kodak Bantam Special seems to fill perfectly another niche in Eastman's Kodak Hall of Fame.

Its smartly-styled, die-cast and machined aluminum case, carefully shaped for maximum convenience in the hand, and finished in a new-type baked enamel that possesses unusual toughness, puts the Kodak Bantam Special in a style and design of its own. The rich, lustrous black enamel finish presents a pleasing contrast to the raised aluminum ribbing of the case.

When closed, the case provides complete protection for the lens, shutter, and front elements of the view-finder and the range-finder.

And, speaking of the range finder, Eastman Kodak Company presents for the first time a built-in, synchronized range finder of the split-field, military type. Great accuracy in focusing results. The housing in which it is located is an integral part of the camera body casting and is completely enclosed, hence no dust or dirt can get in. Coupled and synchronized with the focusing mount, the

range is found by moving the focus-lever which operate from a handy position directly above the shutter. When the split image is brought into a coincidence, the lens is in focus. All this is accomplished in one operation. To the right of the range finder is a built-in optical view finder. An auxiliary focusing scale on the lens mount shows at what distance the picture is being taken.

In addition to the shutter release either a special plunger release or cable release, available as accessories, may be used. The camera may be closed with plunger release attached. For closing, the focusing knob is pushed just beyond the infinity focus position, thereby providing ample lens clearance. Opening the camera sets the focus automatically at infinity.

No projections mar the clean, trim appearance of the back. The film window has a flush-type sliding cover. Automatic film measuring and centering prevents overlapping of exposures, simplifies turning the film to the next exposure. And to make film winding doubly convenient, the winding knob may be pulled out to extend it beyond the range-finder housing.

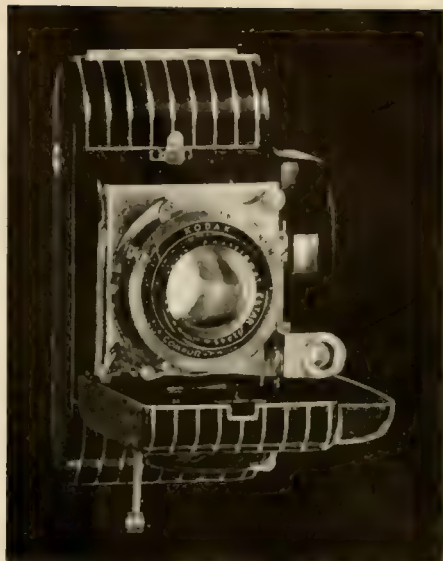
A specially designed film pressure plate of heavy gauge metal holds the film in microscopically-fine focal-plane adjustment, assuring a sharp image throughout the negative area.

Kodak Bantam Special is a true Bantam in size—length $4\frac{7}{8}$ ", width $3\frac{1}{8}$ ", thickness $1\frac{1}{16}$ " and weighs 16 ounces.

New Eastman Ektar Lens Makes Its Debut

Announcement of the Kodak Bantam Special marks the appearance, also, of the first of the Ektar lenses—a new series of high-precision Kodak Anastigmats. To bear the Ektar name a lens must be of such exceptional quality that it will equal or surpass any lens of comparable aperture obtainable anywhere, thus making it an outstanding performer in the class of work for which it is intended.

The 45 mm. f.2 Ektar lens is a six-element anastigmat. Made by the most precise manufacturing methods according to a newly computed Eastman formula,



Kodak Bantam Special

its performance, even at the full f.2 opening, will enthrall the most critical. Eastman lens designers, in this new Ektar, have succeeded in reducing both the spherical and chromatic aberration to negligible proportions, at the same time maintaining a perfectly flat field, free from astigmatism and distortion to a degree which is remarkable in a lens of this very large aperture. These attributes of the new Ektar all contribute to one end—microscopically-clear negatives vital to the making of generous enlargements amazingly rich in detail. With its f.2 Ektar Anastigmat lens and 1/500 second Compur-Rapid Shutter, amazing pictures are brought within easy reach of the Kodak Bantam Special owner.

Two Films Available

The Kodak Bantam Special loads with eight exposure roll film. Two different types of film are available—Panatomic, F828; Super X, X828.

New Burke & James Items

Amateur photographers will welcome the announcement by Burke & James of a photo tray made entirely of bakelite—in the popular 4 x 6 inch size. (It actu-

ally measures $4\frac{1}{2} \times 6\frac{1}{2} \times 1\frac{1}{2}$ inches.) Bakelite is a lifetime material. It is not affected by acids or alkalis. Its highly polished surface is easy to keep clean. There is no enamel to chip. It has everything you would want in a tray—and being $1\frac{1}{2}$ inches deep, it is practically “splash proof”.

There is nothing so satisfyingly dependable in the dark room as a timer that ticks off the seconds for you when making exposures—or a reliable time-piece for keeping tab on development times. The new Luxor Timer does both. Its large full sweep second hand is both audible and visible—while hour and minute hands keep accurate time for developing, etc.

Light on a dark subject is always welcome, but in the dark room you must be sure that it is safe light. Burke & James are featuring new safe lights in ruby and amber colors. They provide double filtered light. They consist of an inner bulb in ruby or amber and an outer globe in the same color. They attach easily to any standard electric light socket. No need any longer to strain your eyes in the dark room when safe lights like these are available.

All of these items are obtainable at remarkably low prices. The trays at \$.25, the Timer at \$2.98, and the darkroom lights at \$1.25 and up. Write directly to Burke & James, 223 W. Madison St., Chicago, Ill.

Orelup Negative Integrator

What a sparkling negative! What awful prints! These two ejaculations may be heard in many a photographer's dark room as he wonders why, from appar-

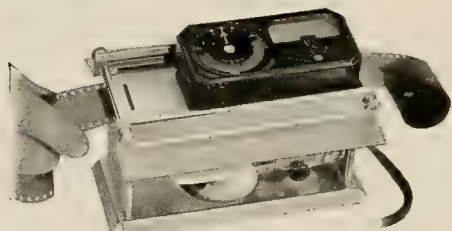
ently clean cut and crystal clear negatives, shadows fill up, detail is lacking and annoying haze appears over the whole print. The answer in many instances is due to fog, according to J. W. Orelup, inventor of the Negative Integrator. Mr. Orelup points out that chemical fog is frequently not visible to the eye and can be detected only by inspection under the microscope or by evaluation in a Negative Integrator. Since the Negative Integrator employs a Weston photo meter it is within the means of the average photographer, possessing one of the Weston instruments, to determine in advance of projection, whether or not his negatives are handicapped by troublesome chemical fog.

The Orelup Negative Integrator, (as announced in his magazine's advertising section), puts a Weston meter to double duty, utilizing this very essential photo accessory in the dark room as well as out of it. For the many who own a Weston meter this new field of usefulness opened up by the introduction of the Orelup device will mean a greater justification for the use of a Weston in exposing with the camera, since faults in negative quality will become apparent quickly to the consistent user of an Orelup Integrator.

A chart of enlarging Paper Factors for use in conjunction with the Orelup Integrator is now available, free for the asking. This chart gives the relative exposure times for various sizes of projection paper from 3×4 inches up to 11×14 . When used in conjunction with booklet A which is also distributed free, one can quickly and conveniently rate any given size of paper for exposure. Both the Chart and the Booklet can be had by writing to R. P. Cargille, 118 Liberty St., New York City, N.Y.

Hillary G. Bailey Joins Agfa Ansco

Announcement has been made that Hillary G. Bailey, F.R.P.S., portrait and illustrative photographer of Indianapolis, Ind., has joined the professional sales organization of the Agfa Ansco Corporation in Binghamton, N.Y. Mr. Bailey is



Orelup Negative Integrator

nationally known among photographers, not only for his outstanding photographs which have been hung in all major salons throughout the world, but also as a popular speaker and demonstrator on convention and photographic association platforms.

He has also gained a world-wide reputation for both his writing and research in the fields of practical photography. His articles of this nature earned him the coveted fellowship in the Royal Photographic Society.

In his new position at Agfa Ansco Mr. Bailey will be concerned chiefly with product demonstration and information relative to professional materials and equipment. Mr. Bailey's many friends will be pleased to know of this new association.

New Surface of Brovira Paper Announced

The well-known Agfa Brovira paper, widely popular for its excellence in projection work, is now offered in another attractive surface. This new medium is Kashmir, a pebbled surface with a slight sheen, available in both white and ivory stock and in three grades of contrast—soft, medium and hard. Kashmir, which has gained such great favor among users of Indiatone paper, brings new beauty to the Brovira line, for its lustrous surface combines with the deep, rich blacks of the Brovira emulsion to give a convincing feeling of depth and roundness. Kashmir is available in all standard sizes at regular double-weight Brovira prices. Brovira Kashmir is manufactured by Agfa Ansco Corporation in its plant at Binghamton, New York.

Central's New Fall Sale Book Coming Off the Press . . .

The Central Camera Company, 230 South Wabash Avenue, Chicago, Illinois, is ushering in the Fall picture season with issuance of their new Fall Sale Book which is now ready for distribution. Any reader of Camera Craft is entitled to receive a free copy upon request. According to Mr. Harold R. Flesch, Director of Merchandising, this is expected to be the most successful Fall season in the thirty-seven years Central has been serving the photographic profession, and the Fall

Sale Book is literally crammed with new and used bargains in quality photographic equipment and supplies. Special efforts have been made to include the latest, newest development in cameras, lenses, films and photographic supplies. Low bargain prices and the Central Guarantee of satisfaction or money back, makes a "buy" combination that should appeal to every professional and amateur photographer.

Albert Jourdan

Photography and photographers have lost a tried and true friend with the passing of Albert Jourdan at his home in Portland, Ore., July 27th. Mr. Jourdan was a true scholar in many scientific fields. He earned the lasting gratitude of photographers throughout the country with his many helpful articles appearing in American Photography and in this magazine. He is survived by his wife, Mrs. Alda Jourdan, whom we hope will find some comfort in knowing that the whole photographic fraternity extends their sincere sympathy.

Abe Cohen's Exchange, Inc.

Bargain hunters are warned not to overlook the many excellent buys offered by Abe Cohen's Exchange, 120 Fulton St., New York, N. Y. At present they are offering a number of new imported cameras at the prices prevailing before the July 11th tariff increase. All cameras are sold on a ten day trial basis. If you don't see what you want listed ask for it.

Put Your Argus on a Tripod

Miniature camera owners should realize that it is a difficult matter to hold a small camera still enough to obtain really sharp negatives at any of the slower exposures, and that the slightest movement will surely show up when the small negatives are enlarged. A tripod therefore is an indispensable accompaniment of the small cameras. Wm. J. Grace now offers a simple little accessory which makes it possible to place the Argus camera on a tripod or Beltipod. All that one need do is to erect the lens to taking position and screw a small brass plate, which may be obtained for only \$1.00 on to the lens board of the camera. It in no way interferes with the operation of the camera, and need never be removed. Write to Wm. J. Grace, 312

West Page St., Dallas, Texas, for descriptive literature on this and other useful accessories

Bargain Bulletin

We are informed that Clyed's, 1102 First Ave., Seattle, Wash., is just completing the preparation of a Bargain Bulletin which will offer many worthwhile savings in used cameras and equipment. It can be had for the asking by writing to the above address. We might also add that this firm carries a complete line of up-to-date photographic books and periodicals, and it will be worth your while to drop in and look over the new publications from time to time.

Stolen Cameras

The service department of the Folmer Graflex Corporation, Rochester, N. Y., camera manufacturers, is requesting the assistance of the public in their efforts to recover Graflex-made cameras which have been lost or stolen. A list of all cameras, their serial numbers and other information have been mailed all Graflex dealers with the hope that many of the missing cameras may be located.

An accurate record of every camera manufactured by the company is kept in its files. The service department of Folmer Graflex Corporation maintains a registration system and its files now contain the names and addresses of thousands of owners and the serial numbers of their Graflex cameras and lenses. The service Department releases all available data to its dealers whenever an owner reports his camera lost or stolen.

Folmer Graflex Corporation urgently requests that persons finding a Graflex-made camera or who knows of anyone finding one, have the camera brought in to any Graflex dealer for comparison with serial numbers of cameras that have been reported lost or stolen. The manufacturer advises all who contemplate the purchase of used Graflex or Speed Graphic cameras to make a note of the serial numbers of both the camera itself and of the lens and report them to their Graflex dealer before purchasing. This, he says, not only safeguards the purchaser from receiving stolen property but also helps greatly in locating such photographic equipment.

According to Folmer Graflex Corporation, thieves apparently know the value

and salability of Graflex and Speed Graphic cameras. Therefore, all owners are urged to guard their cameras carefully and not to leave them where they might be a temptation to dishonesty.

Photographic Rental Library

Alan Benjamin Film Craft, 931 Flatbush Ave., Brooklyn, N. Y., announce the opening of a rental library for photographic publications. A very complete line of books will be available and renters will be permitted to apply the rental fee to the purchase of the rented book if they decide that they would like to keep the volume.

Tru-Vue Viewer

Those who like to do things the modern way, who like the machines and utensils which they use to be designed for maximum convenience, efficiency and usefulness will be delighted with the Tru-Vue Viewer. This handy and entertaining device is an up-to-date means for viewing pictures in true stereographic relief, that is, with the third dimension clearly evident. The viewing device is less bulky and much lighter than an ordinary pair of opera glasses. The pictures (there are two images of each subject, of course) are printed on 35 mm. film, which is moved through the viewer by the flick of a lever. The pictures are positive transparencies and are viewed by transmitted light, which means that they have far greater brilliancy and relief than was ever possible with the old style stereopticon which utilized paper prints viewed by reflected light. For \$1.00 you can obtain the viewer and a film roll containing 15 pictures. Additional rolls of 15 pictures cost \$.35. Each film roll deals with a particular subject and the company offers a great variety of rolls covering travel, educational subjects, the national parks, sports, entertainment and special subjects for children. We have seen a room full of adults absorbed for a whole evening in looking at these interesting pictures and, of course, this system of picture viewing is ideal for children or convalescents. Write to Tru-Vue, Dept. C, Rock Island, Ill., for a descriptive circular, and a complete listing of the library of films today.

Speed-O-Copy

Easily one of the most useful accessories offered to the Leica or Contax owner, the Speed-O-Copy converts either Contax or

Leica into a full size ground-glass focusing camera. This means that the most critical focus can be readily obtained and that the subject can be composed on the ground-glass and adjusted to fill the film area so that a large print can be had with less enlargement, since the largest possible image can be obtained on the film.

The advantages of ground-glass focusing will be especially evident in close-ups, in table top photography, in copying and in portraiture. In all of these fields an exact delineation of the field of view and the most critical focusing is of maximum importance. A further very useful application of the Speed-O-Copy lies in the field of color photography, Kodachrome or Dufay-color. With this device the operator sees on the ground-glass exactly what he will

get in his picture. The full size image in color.

Write to D. Paul Shull, 240 S. Union Ave, Los Angeles, Calif., for an interesting descriptive folder on Speed-O-Copy and other valuable accessories which he manufactures.

Hirsch & Kaye

Hirsch & Kaye, 239 Grant Ave., San Francisco, Calif., are now distributing a new catalogue on the Gross Photo Supply Company's line of photographic mounts. A very complete line of the new fall and winter styles are shown and anyone interested in the newest type mounts should not fail to obtain a copy. By way of innovation the inside of the back cover is an order form while the reverse side of the sheet is a business reply card for your convenience in ordering.

Our Book Shelves

Photography and the Art of Seeing, by Marcel Natkin. English translation published by the Fountain Press, of London, exclusive American distributors, Camera Craft Publishing Company, San Francisco, Calif. Page size 8½"x11", reproductions in photogravure, cloth binding, \$3.50.

If we disregard for the moment inherent talent and consider those factors in an artist's equipment which may be learned by study and practise, what is the most noticeable difference between the great masters of photography and the masses who are striving to do something worthwhile?

Is it not that the masters each have a definite aim and ideal toward which they are striving? An objective which is more or less clearly held in their minds, and toward which they consciously strive to mold all the material which they choose to use for picture making. This is equally true of Steiglitz, Steichen, Misonne, Mortensen, Echague, Weston, etc., in spite of the great difference in their work. The mass of photographers are without this guiding force. They have no clearly re-

alized objective and consequently their progress is inhibited by continual vacillation.

Is it not also true that the leaders of photography have learned the "art of seeing"? They have learned to visualize the most effective form in which their material can be presented as a picture. The mass of photographers are notably without this ability.

This book strikes directly at these two most fundamental weaknesses of the average photographer today. It is just the sort of book that is most needed today for it strives to show the reader how he may cultivate the "art of seeing". The author writes with remarkable clarity of expression. Each of his points is illustrated by reference to the pictures of leading photographers which are a feature of the book, and further pointed up by a liberal use of tone diagrams. The book is typographically very beautiful and the reproductions, of which there are 37, plus 13 tone diagrams, are in fine photogravure. We do not hesitate to say that this book should be read by every serious photographer.

The American Annual of Photography, 1937. Edited by Frank R. Fraprie, published by American Photographic Publishing Company of Boston. 324 pages, 7¼"x9¾", \$1.50 paper, \$2.25 cloth.

We are inclined to feel that this is the best American Annual ever, and that is saying a lot for previous editions of this book have consistently been of great value to photographers. The twenty three major articles are on subjects of great interest and importance. Mr. Fraprie contributes an illuminating discussion of the pictures, that is made doubly interesting by frequent quotations from the photographer's own comments on his picture. Technical data on each picture is also given. In addition there is the list of Who's Who in Pictorial Photography, a list of American Amateur Photographic Societies, and the section devoted to formulas. The one hundred full page reproductions cover every phase of pictorial photography the world over, and are produced by the half-tone process. We are sure that every purchaser of this book will agree that he is getting a lot for his money.

The Photo Guide Series:

1. **A Good Picture Every Time.**
2. **Sharp Focus, Accurate Exposure.**
3. **Photo Faults.**
4. **Taking Pictures at Night.**
Translated from the German by P. C. Smethurst. Published by American Photographic Publishing Company of Boston. 5" x 6½", approximately 45 pages, paper bound, 40c each.

Here are four extremely useful little booklets for the beginner in photography. With the exception of number three they feature a large amount of carefully and intelligently selected illustration so that each point is explained through pictures as well as the printed word. These are part of an extensive series which has achieved astounding popularity in Germany, the country of their origin, and the American publishers are performing a real service in making them available in this country. The titles sufficiently explain the contents of each book with the possible exception of number one. In this book the author discusses a number of the so-called "rules" of photography, his purpose being to point

out that such rules are by no means iron-clad and can often be disregarded to advantage. He accomplishes his purpose most admirably by showing on one page a picture which follows the rule and on the facing page a picture which departs from it but is nevertheless entirely successful. These pictures with the accompanying text tell the story with remarkable clarity and even advanced photographers will find this discussion most interesting.

Correct Exposure, by William Alexander.
Published by the Fomo Publishing Co., Canton, Ohio. 93 pages, 5"x7", imitation leather binding, price \$1.00.

Many a photographer has the mistaken impression that the purchase of a good exposure meter means that no further thought need be given to the exposure problem. On the contrary, the best meter is of no help unless one knows how to use it properly and to obtain the most from a meter it is essential that all of the various factors underlying the exposure problem be fully understood. A careful perusal of this book will reward the reader with a surprising amount of very useful information that will surely help to improve the accuracy of his exposures whether he uses a meter of any kind or not.

Natural Color Processes, by Carleton E. Dunn. Published by American Photographic Publishing Co., of Boston. 194 pages 5¼"x7½", cloth bound, \$2.00.

In this book the author supplies practical working instructions on every system of color photography that is in general use today. He avoids theory for the most part and concentrates upon describing actual working methods. The book is fully up-to-date, discussing such recent developments as the Chromatone process, but aside from such additions it cannot be said that the book offers much in the way of new information. This is not really to be expected however. The real value of the book lies in the fact that the author writes simply and straight-forwardly, and does not assume that his readers are in possession of any previous knowledge of color photography. Thus the book constitutes an excellent volume for any one who is investigating the subject for the first time.

CAMERA



"Sails"

Don Kirby Oliver

CRAFT

November 1936

PRICE 25c

MORE ABOUT FINE GRAIN

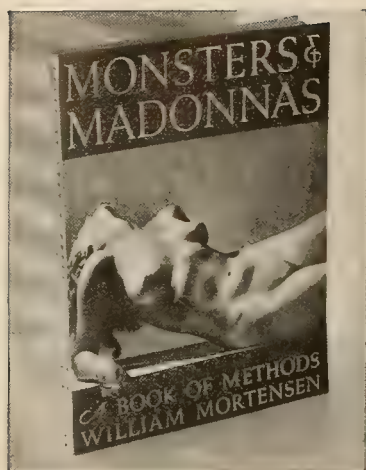
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"A Spring Time Measure"

7th Chicago International Salon

Oliver J. Berg

More About Fine Grain

Harry Champlin

THE development of a miniature negative is truly a simple procedure—all that the kitchen photographer has to do is mix up a suitable formula and insert the film in it. After development is completed the film should be rinsed in a bath compounded to neutralize the chemicals of the developer and then fixed in a good combination hardening-fixing solution. All that remains, then, is the final wash to rid the film of all chemicals. The development of a miniature negative is definitely not an art filled with many deep mysteries although it does require the maximum care if the best results are to be attained.

The postman in our little city of Beverly Hills has been weighed down with letters from all over the country—letters from miniature camera photographers who read the August issue of *CAMERA CRAFT* and were intensely interested in the formula #7 published therein. Many letters were from amateurs who had tried the formula and were enthusiastic about it. Other letters were filled with questions concerning developing procedure, and, naturally, there were the usual letters from amateurs with an experimental bent who had changed things to suit themselves.

Before going on with the subject of fine grain developers and the results of our experiments it may be well to first enumerate some of the troubles which the kitchen photographer is likely to encounter, and to point out ways to avoid these troubles.

One of the prime offenders in fine grain development is the water used in compounding the developing formula. This is especially true with such delicately balanced formulas as numbers 7 and 9. If the water contains any chlorine, for example, the paraphenylenediamine will become more or less inert. If sulphur or certain alkalis are present there will be a softening of the gelatine beyond the ability of the hardening agents in the formula to counteract and reticulation will surely result. The use of distilled water in compounding any fine grain formula is as essential as the purity of the other chemicals in that formula, because it completely

eliminates the possibility of chemical contamination of the developer. Boiling chemically-laden water will not suffice.

The temperature recommended with formula #7 is 73-74° fahrenheit for all rolls except the first, which should be developed at 70° fahrenheit. No harmful softening of the gelatine will result from these temperatures if the developer was compounded from pure chemicals and distilled water. In fact, it is possible to use this developer at much higher temperatures without any reticulation whatsoever if a suitable stop bath and a fresh hardening-fixing solution are used after development.

The chemicals in formula #7 will quickly break down a fresh hardening-fixing solution. This breakdown is not apparent and is very serious because it permits undue swelling of the gelatine in the fixing bath and final wash, and reticulation usually results. For this reason a stop bath is indicated between developing and fixation. A stop bath will neutralize some of the chemicals carried in the film from the developer to the fixing bath. The hardening properties of stop baths containing alums and of fixing solutions containing this chemical are quickly neutralized by developing solutions containing paraphenylenediamine and glycin. For this reason it is best to use a fresh stop bath for each batch of films developed. An excellent stop bath consists of:

Water	16 ounces	500 mls
Potassium Chrome Alum	1/4 ounce	7 grams
Sodium Bisulphite	1/4 ounce	7 grams

This stop bath will not keep. It should be used and then discarded.

The use of a hardening bath before development is to be discouraged. A prehardening bath prevents swelling of the gelatine by the developer to the extent that the developer cannot penetrate the film and properly reduce all of the light-effected silver. Formalin is the chemical generally used in prehardening and it is responsible for considerable fog, streaks in the developed image and some loss of shadow detail.

Whenever it becomes necessary to develop at extremely high temperatures (78-88° fahrenheit) the addition to the developing solution of sodium *sulphate* is highly recommended. This chemical is inert photographically and will therefore have no effect upon the developing powers of the other chemicals in the solution. The amount recommended is 50 grams per litre (1 ounce per 20 ounces) of working developer. There will be some increase in developing time necessary to secure full density negatives due to the fact that this chemical inhibits swelling of the gelatine to some extent.

The fixing bath recommended for use in the processing of miniature films should be fresh, and should contain, in addition to the sodium hyposulphite, a preservative, an acid and a hardener. An excellent fixing bath is one made with water, plain hypo crystals, and Velox liquid hardener.

All of the above recommendations have been found by experience to be sound practice regardless of the developer used.

Formula #7 was something entirely different from the average run of fine grain developers offered to the miniature camera photographers.



Harry Champlin

Contax; Triotar F:4, 85 mm.; 1/50 sec. at F:16, on Du Pont Superior rated at Weston 50; negative developed in Champlin #9. Note full detail in dark vest.

The formula was as follows:

Water.....	20 ounces	1000 mls
Metol.....	25 grains	2.5 grams
Sodium Sulphite.....	1 ounce	45 grams
*Acid Benzoic.....	9 grains	1 gram
*Acid Salicylic.....	4 grains	0.5 gram
*Acid Boric.....	25 grains	2.5 grams
Glycin.....	$\frac{1}{4}$ ounce	11.5 grams
**Paraphenylenediamine.....	$\frac{1}{4}$ ounce	11.5 grams

*Use pure chemicals such as Mercks or Mallinckrodt reagents

**Use only the pure base—not the hydrochloride

You will note that the formula contains a small quantity of metol. Metol is a very energetic reducing agent and was used here to give a slight increase to the shadow detail. Now, paraphenylenediamine and metol are by no means a truly ideal combination for fine grain work. There is always a tendency towards clumping the silver grains into little groups whenever metol is added to any developer.

To deal intelligently with this problem, there must be some understanding of this clumping of silver grains in an emulsion. When light strikes a particle of silver in an emulsion it is reflected as if by a mirror to a countless number of surrounding particles and all of these particles should be acted upon by the developing substances. Certain chemicals in a developing solution can create a turbulence in the emulsion during the process of development and whirl all of the light-affected particles of silver into little groups around the ones that actually received the light.

These little groups or clumps are the grains which have been bothering us so much. The problem is to act upon every light-affected particle of silver and still prevent this clumping. Some developing solutions give very fine grained images because they do not act upon more than forty per cent of light-affected silver. Such formulas are really a hindrance to the advancement of photography.

Formula #7 was used as a basis upon which to work and experiments were conducted, taking out a little of this and adding a little of that, and noting the results in a little black book.

A perfect developer would be one that dyed the latent image and still had just enough of the ordinary reducing action of present day fine grain developers to give sufficient density in the highlights for correct contrast. Experiments along this line lead to pyro and its derivatives. This chemical is an excellent stain producer; one of the best, in fact, of the whole list of reducing agents. The stain given by a pyro developer is in direct proportion to the amount of preservatives in that developer. This is truly a major difficulty because fine grain developers generally require a much higher concentration of sodium sulphite than ordinary types of developing solutions. Pyro is by no means a fine grain developer but the stained image created by this chemical which rests upon the surface of the film has no grain structure whatsoever.

Rubinol is a pyro derivative—it has all of the good features of pyro,



"European Scene"

Harrison Chandler

*Leica with 50 mm. Summar F:2; Du Pont Superior film developed in Champ-
plin #9. From 10x enlargement.*



F. H. Trego

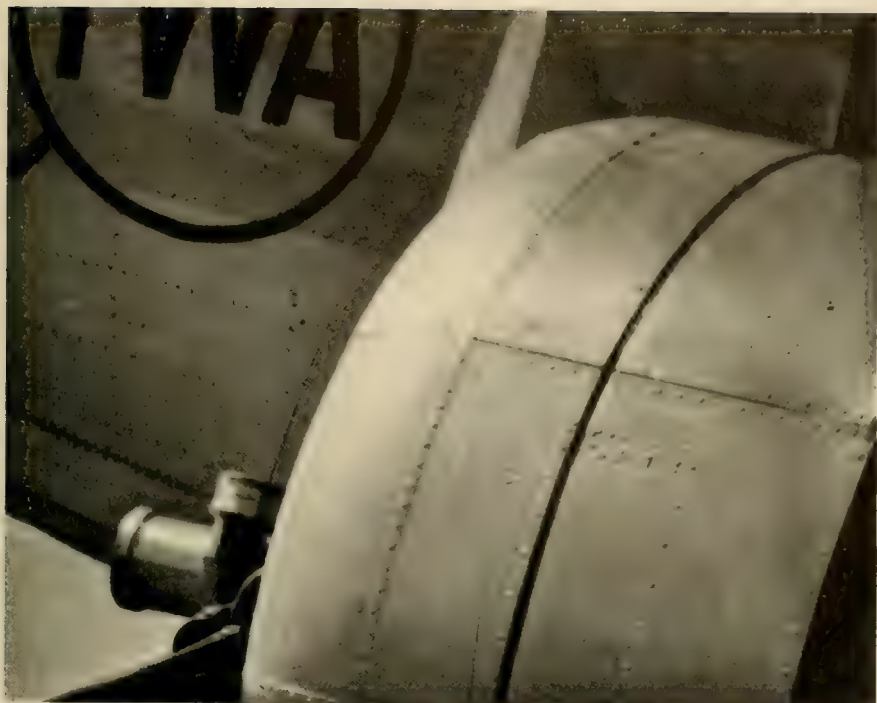
6.6x enlargement from negative on E.K. Super X developed in Champlin #9. Cut one half size of print.

and, so far as our purposes are concerned, none of its major faults. When combined with a high sodium sulphite content fine grain developer this chemical will give images with a distinct yellow-green stain.

Rubinol was substituted for the metol in formula #7. The grain size was increased because the rubinol was actually reducing some of the silver. The developing time was decreased twenty-five per cent. There was a little more contrast, due to the stain, and a slight increase in film speed.

The addition of still another acid, digallic, seemed to have a definite effect upon the rubinol, to restrain its reducing ability without affecting its stain producing qualities. There was an immediate drop in grain size, an increase in developing time, while the slight increase in film speed was retained.

All these chemicals in solution brought up the problem of crystallization at temperatures around 65° fahrenheit. Any crystallization would naturally rob the developer of certain of its components. For this reason alcohol was added. Several alcohols were tried. The kind you drink and the kind you must not drink. Pure grain alcohol was satisfactory although it permitted a sludge to form in the bottom of the beaker. Alcohol iso proptyl was finally selected it reacted most favorably with the other chemicals in the formula. This alcohol smells to high heaven, but it does keep everything in solution — even the grey-back anti-halation coating dissolved out of the film.



F. H. Trego

28.83x enlargement—same negative as shown on opposite page. Cut one half size of print.

The formula as used is as follows:

Champlin #9

Water.....	20	ounces	1000	mls
Sodium Sulphite.....	1½	ounces	60	grams
* Acid Benzoic.....	18	grains	2	grams
* Acid Salicylic.....	4	grains	0.5	gram
* Acid Boric.....	25	grains	2.5	grams
Rubinol (Defender).....	32	grains	3.5	grams
* Acid Digallic (Tannic).....	9	grains	1	gram
Glycin.....	¼	ounce	11.5	grams
** Paraphenylenediamine.....	¼	ounce	11.5	grams
Alcohol Iso Proptyl.....	1	ounce	50	mls

* Use pure chemicals—Mercks or Mallinckrodt reagents

** Use only the pure base—not the hydrochloride

Dissolve the chemicals in the order given. Mix all of the chemicals except the paraphenylenediamine and the alcohol in three-fourths of the water, then dissolve the paraphenylenediamine by boiling in the remaining one-fourth of the water and add to the first solution. When cooled to 70° fahrenheit add the alcohol.

Develop Super X and Dupont Superior 19½ minutes at 70° fahrenheit and allow an additional two minutes for each succeeding roll. Agfa Superpan should be developed 16 minutes at 70° fahrenheit and Eastman Panatomic 13 minutes at 70° fahrenheit. Do not increase the temperature above 72° or decrease it below 68° fahrenheit. The temperature of this developer is of the utmost importance and should not be changed beyond the limits given above. "The tank should be agitated every two minutes or so to prevent any possibility of streaks from the sprocket holes. Ordinary roll film need not be agitated after the first shake when the film is inserted in the tank. Continuous agitation decreases developing times about twenty per cent."

The developer will soon take on the appearance of pea soup, but the appearance will have no effect whatsoever upon the developing properties. There will be no change in the appearance of the developer if it is filtered and no advantage will be gained. The negatives developed in this formula are beautiful to look into and a joy to print. The speed is about one-half stop faster than #7. That is the Weston rating of either Eastman Super X or DuPont Superior was increased from 40 with #7 to 50 with #9. (25° to 26° Scheiner). The grain size is the same as that given by Sease #3. The polish on the emulsion side of such ultra rapid films as Eastman Super X and Dupont Superior will cause many enlargements to be projected backwards.

This formula is a vast improvement over #7. However, this writer believes that the ultimate solution to the developing problem of miniature negatives will lie in the use of dyes as yet not connected with photographic chemistry. This also is the conclusion of the friends who have helped with all these experiments—Harry Crawford, Frank Trego, Arkell Burnap and Dr. J. P. Sampson, all likeable fellows with little cameras, and to whom we owe some measure of thanks.

CAMERA CRAFT points with pardonable pride to the fact that in the articles of Mr. Harry Champlin and Mr. H. Crowell Pepper, it is offering its Minicam readers information of the greatest value. Mr. Pepper's articles as a whole will constitute a complete course in Miniature Camera Photography. In our December issue Mr. Pepper will take up the discussion of The Negative. Mr. Champlin will continue to report significant new developments in his own work and will contribute special articles on various important aspects of miniature photography. If there is a subject upon which you would particularly like to read an authoritative, carefully prepared article, please let us hear from you.—ED.

The Unusual Viewpoint

Glen Fishback

WITH the trend of the day away from a set type of presentation and toward a more liberal interpretation of subject matter, there is offered a wonderful opportunity for individual expression and originality. This individuality allowed to run rampant would produce some very odd effects, but when intelligently harnessed and directed toward a definite goal there is a good chance for something fine to be produced.

The cause for the present discussion is an idea that came to the writer some time ago with regard to preparing a series of pictures for one of the local newspapers. When he failed to sell a lone picture to the paper he was encouraged by the city editor to go out and try his hand at getting a series of shots. Then started a search for ten pictures that could be classified as having never been noticed or taken before. Sacramento is a city of over 100,000 population and it would seem that such an assignment would offer no great difficulties, but the recognition and reproduction of pictures that could really be considered worthwhile when they were done was to prove quite a brain teaser.

A notebook is an indispensable companion while following such a pastime. You must always be on the alert for ideas and whenever anything comes to mind it should be jotted down. It may not prove to be of value on further examination, but it can always be discarded, and there is nothing so frail at times as the human memory when it comes to remembering something that might prove good for future use. You will find as time goes on that you have from three to four times as many possible shots as you will use, but this plan gives you the freedom needed in deciding on only the best pictures.



"End of the Line"

Glen Fishback



"Pioneer Reminder"

Glen Fishback

This is one type of picture that can't just be snapped and then be expected to come out satisfactorily. In only one or two instances did the writer pick up a shot that he had not planned days ahead. The usual procedure was to visit the location of the proposed picture to determine the best time of day for an exposure and to decide on the point of view. In addition, it was necessary to figure out such items as the including of human figures, the relative importance of foreground and background interest, and the contrast of different objects with relation to size.

Even though our subject matter allows of rather drastic treatment, the ever present stumbling block—composition—must not and cannot be overlooked. If you expect to turn out anything that will attract notice you must be sure that there is one point of interest, that there are no lines of interest that draw the eye out of the picture, and the picture must hold together. In other words, you must take the time to give a little forethought to what you are doing and see to it that the fundamental standards of good composition are incorporated in each shot. Tilting buildings may not go over with the architect, but in this realm of photography we are in possession of a certain photographic license, much as our friend, the poet, in his field, and as long as you have a good reason for tilting a building, let it fall where it may.

Every man to his own choice when it comes to preference in cameras, but in the present instance a Leica was used. The miniature camera demands the utmost of a man's technique, but in return it offers the advantage of small size, accessibility to difficult locations, not to mention economy of operation. The quality of the final 8x10 prints from a reliable miniature camera rests entirely with the photographer and any dissatisfaction in the final product need not be laid to the defenseless camera.

Due to the extreme depth of focus necessary in the accompanying daytime illustrations a stop of f-18 was employed, and use was made of a tripod or other suitable source of steadiness.

In order to be successful in this newer field of effort it is necessary to give full play to the imagination. The eye must be trained to recognize pictures where they apparently do not exist and a sense of the dramatic will go a long way toward producing unusual effects. To take the ordinary and present it in a way that demands recognition is the goal toward which you are striving, and it can be attained only by the patient training of your faculties of observation.

The very fact that this style is different will bring to life certain skeptics who will be unable to appreciate your efforts, but such has been the case from the beginning of time. Anything that has encouraged change in the old order of doing things has met with opposition from a multitude of sources. So let us not be discouraged, but take advantage of every opportunity that presents itself to give expression to our ideas in new and ever changing form.



"A Sight for Sore Gums"

Glen Fishback

A Secret Of Success In The Salon

E. Thorwaldsen Throop

FIVE years ago I had never had a picture hung in a recognized salon. I had wasted hundreds of dollars on cameras, lenses, papers, developers. I had read books, taken courses. But something seemed to be missing from my prints, for they always came back without those coveted labels on the back.

What was the trouble? At last I got tired of this blind hit-or-miss process, this eternal working in the dark. I determined to go to a man who *knew*.

Writers on photography have often pointed out that every ambitious amateur should try to make friends with one established professional if he wants to make rapid progress with his camera. The neophyte in many an art or craft can learn a lot from books, but there is no substitute for the inspiration that comes of personal contact with someone who excels.

Off and on for years I had heard of the work of John van Whizzle, that dynamic artist of the lens whose work has been hung so consistently in the internationals until his untimely death a few years ago. I determined to seek him out. I shall never forget the afternoon when I called at his studio, for I learned a secret that every pictorialist can use.

He was very kind to me, stranger though I was. "What can I do for you?" he asked.

I told him of my failure to win recognition in the salons, and of my discouragement. I showed him some of my prints; I had brought them along in one of those convenient black envelopes in which bromide paper is packed. He studied them, then fixed a compelling eye on me.

"Young man," he said (at this time I was indeed a very young man), "there is nothing seriously wrong with your prints. The main trouble is with your titles."

"With my *titles*?" I gasped.

"I repeat," he countered, "the trouble is with your titles. How do you expect to get into the salons with titles like these, and sometimes, I see, with no titles at all?"



"La Plage Marbree"

Seventh Chicago International Salon

Leonard Misonne

"I see that you are surprised," he said gently, "but Great Truths are always surprising. Look at the names of my pictures hanging on the wall behind you, and see if you do not understand what I mean."

I examined them, but still the point eluded me. The titles were all heavy with sentiment, even (it seemed to me in my ignorance) with sentimentality. Such titles as *Outcast*, *The Return*, *Radiance*, *Mist o'Dreams*, *The Lonesome Trail*, *Windswept*.

"Now," he said, "compare those with some of the titles you have used." He picked up a picture of a boat washed up on a beach. "What's wrong with this picture? There's no human element in it. There should be a fisherman in oilskins, some human figure to give it meaning. All right—capitalize this weakness. Feature it. Make it look as though you didn't *want* a fisherman in the picture. You have called it *The Skiff*. I would call it *Abandoned*, or *Forsaken*!"

I began to understand. He picked up a picture of snow and pine trees. It had no title. "This picture would be much better if there were at least a few footprints in the snow. Let's follow the same principle here. You might call it *Untrodden*. Or *Winter's Mantle*, or, better still, *Forest Sentinels*. That word *Sentinels* is a great success in the salons this year. You'll hardly find a salon without several pictures called *The Sentinel*, or *Hill-top Sentinels* or something. "Of course," he added, "I can't imagine why you try to get into a salon with a snow scene that is not blue-toned. It just *isn't done*."

He reflected for a moment. "I am going to tell you a secret. As much as any one thing it is the secret of my success as an exhibitor." He walked over to a desk and took out a piece of 16 x 20 mounting board. It was covered with figures.

"On this board," he explained, "I keep a record of all the titles of pictures hung in salons each year. I get the titles from the catalogues (which of course I receive as a successful exhibitor). Then I find the titles which are most popular, in order of the number of times in which they appear.

"For instance, the most popular title last year was *Reflections*." He showed me the record. Twenty-two pictures called *Reflections* had been accepted in salons the previous year. The next most popular title was *Youth*, with thirteen hangings. Then in order come *Reverie* and *The Lonesome Trail*.

"Now," he smiled, "what do I do with this information? It tells me that a picture named *Reflections* has a splendid chance to be accepted. In fact it would hardly be too much to say that *any* picture named *Reflections* will get in, for look—here in one large exhibition were no less than seven pictures named *Reflections*. Obviously, every print named *Reflections* got in."

"And so," he concluded, "the four prints which I am sending to most of the salons this year are named *Reflections*, *Youth*, *Reverie* and *The Lonesome Trail*. And they are invariably accepted. It's as simple as that."

A great light dawned upon me. I spluttered my thanks and rushed out into the night. Since that day I have always named my pictures before I take them, often even before I see them, sometimes even before I buy the film, sometimes even before I get up in the morning.

Frequently I will set up my camera, focus and compose my picture; all will be in readiness. But I do not take it yet. I am lost in thought. Shall I call it *Reflections*? Would *Glo of Morn* or *Bubbles* be better? What, from my growing list of sure-fire titles, shall I select for *this* picture? *Pattern—Innocence—Harp o' the Winds—Youth?*

Shall I call it *At Break of Day—Reverie—Solitude—The Twilight Hour—Mist o' Dreams—The Lonesome Trail—Study—Nude Study?*

Or shall I combine several proved titles into one super-title, such as *Nude Reverie Reflections at Break of Day?*

One day recently I was in just such a musing mood. The subject itself was before me. It consisted of some water lilies in a pool—a subject that is a push-over with any salon jury. Many of the names I have mentioned, and more, flashed through my mind. None gave me that sense of rightness, of utter fitness. Suddenly it came to me—*Ecstasy!*

I rushed home, and into the darkroom, made up my developer and other solutions, and switched off the light. I developed the film and fixed it; then, with a tremor of anticipation, turned on the light again. The film was blank.

In my excitement I had forgotten to take the picture.

The next picture I do not take will be a self-portrait. The title will not be difficult to find; I shall call it *Still Life*.

Pictorialism For Beginners

Harold G. Grainger, A.R.P.S.

Part VI: Figures In Landscape Subjects

IN the series of illustrated articles on fundamentals in pictorialism published in recent issues of this journal, a series prepared more particularly for the benefit and guidance of those who recognizing that there is more in photography than mere haphazard snapshooting and have a desire to do something superior to the commonplace, the value of being conversant with art principles has received attention. Amongst the last, though by no means the least important recommendation as a practical aid in producing artistic effects was differential or selective focussing.

Simply stated this secures emphasis exactly where desired—usually the chief point of interest—by concentration of sharpest definition; the rest of the picture being, according to the distance of component parts from the view-point, more or less diffused in outline. It was shown that the method, entirely rational because of limitations imposed by the inability of the human eye to see clearly, at a given moment, objects in more than one plane, is productive of effects acceptable alike to artists and those who insist on naturalistic results.

As the title to this article indicates the use of figures in picture-making is now considered. Their wise employment in landscape pictures is not, as some may imagine, a too-easy matter and advanced pictorialists will, I feel sure, agree that many an otherwise good subject has been, through lack of just a little more care and preliminary thought, spoiled by the introduction of an unsuitable figure or figures. Unsuitability may be due to type, or, maybe, occupation, for the setting or occasion, or, just as disappointing, the clothing worn may appear incongruous. As an example it would be obviously inappropriate, where naturalness should be the aim, to have figures of either sex, dressed in the height of city fashion, engaged in the average every-day occupations of the countryside. These would only be a parody of the real thing.



"Men Gossips"

Harold G. Grainger, F.R.P.S.

Whilst almost anything may be permissible if it suits one's fancy serious efforts in picture-making with a view to their exhibition in first class shows where only the best specimens of artistic endeavour have any chance of acceptance, necessitate a standard of presentation of subject at least equal to that of the work of other pictorialists. From this standpoint it is decidedly better to do without figures in landscape subjects unless their presence is in some way an asset. When introduced they should look so appropriate that in the opinion of qualified observers they could not have been placed elsewhere with advantage.

If the best exhibited work is any criterion it would appear that figures are only introduced if, after mature consideration, the composition requires one (or sometimes more) to emphasize a point, to attract attention to some part of the subject, or to give life or animation to a scene. Anything that can be done to add to the completeness of a subject should therefore receive the attention it deserves. At the same time it is in some cases necessary to avoid giving way to the temptation to use figures without proper care or discrimination.

Landscape and figures should never be of equal interest or pictorial value: one should dominate, the other be subordinate. Figures may be introduced, as already mentioned, into a landscape for a special reason, yet, however important this is, the figures may still be subordinate or secondary, to the subject itself.

Figure subjects with a landscape setting are regarded differently.



Better results are obtained if two pictures are made from "Men Gossips".

These, by the space and position they occupy, naturally claim first attention; indeed they are intended to do so. The setting or background is, in these cases, especially where sufficient control can be exercised, usually as simple in nature as possible: one that does not intrude forcibly on one's attention, nor, at the same time, be detrimental to the message intention. No more figures than are absolutely necessary are advisable, and attention should be paid to the way they group themselves; for where numbers are concerned they should, it is presumptive, have a common interest or bond.

To illustrate this let us examine the village street scene entitled "Men Gossips." It will first of all be observable that without the four men the scene would, despite the satisfactory arrangement of the ancient cottages and quaint, old-world town hall by the side of the rivulet dividing the village into two parts, be of relatively little interest. Passing the time of day at their regular rendezvous on the little bridge the men are appropriate, indeed helpful to the scene in every day excepting the most important one,—they form a couple of distinctly separate groups having no connection whatever with each other. The unity of purpose, the appearance of one common interest which, binding them together would have meant so much is so far lacking that the two separate group formations are far better divided and shown separately.

It is certainly disappointing in such a case as this to have to lose a hoped-for opportunity to make a more presentable and fuller picture embodying village characters eminently suitable for picture-making with a perfectly satisfactory background. In the first group a typical patriarchal shepherd converses with an easier-going companion; in the second, another elderly retired resident with bowed shoulders which proclaim life-long toil is in friendly argument with a younger, more alert small-holder on his way to till his land;—exactly the types which, fittingly arranged



"The Gentle Art"



"Lengthening Shadows"

Harold G. Grainger, A.R.P.S.

in one group, would probably have assured a particularly successful picture in which human interest dominated. Instead, it is, as can be seen, a good example of "The part is greater than the whole" kind of subject,—similar specimens of which can probably be found in the portfolios of every pictorialist, however experienced.

That separate groups of figures in one subject may, on the contrary, be just as essential, is evidenced by the picture of youthful anglers and spectators on a bridge spanning the river which flows through a cathedral city. Imagine this subject, entitled "The Gentle Art", without any figures whatever and it would have been very, very ordinary, hardly worth taking. Now think of it with the larger, more important group as it is, but without the smaller one on the extreme left. It would not in this event be half so satisfactory because all the interest would then be confined to one part; the composition would lose considerably from the lack of balance usefully supplied by the secondary group.

That anglers and friendly spectators alike are all obviously full of concern for the sport is by far the best thing that could have happened when the exposure was made. This common interest in one thing assures the harmony, the unity of purpose so essential to successful picture-making. The light dresses of the little girls, who appear to be determined to make sure of a good view of whatever may happen, as also the shadows cast by the various figures are, in their respective spheres, particularly valuable features in the arrangement of light and dark tones. Stability is provided by the perpendiculars of the sun-illuminated cathedral tower beyond. Whilst one might have liked, say, a couple of figures on the roadway to "break up" as it were, the straight line of the curb, this was not permissible because of the heavy traffic over the busy bridge, the city's main entrance.

"Lengthening Shadows" is a disappointment as a picture largely because of the somewhat straggly arrangement of the figures which, in turn, causes the interest to be scattered. The mother and children are individually appropriate, characteristic of country life and moreover each is suitably attired. The fault is really due to the premature release of the shutter, the selection of an inopportune moment which forestalled the



"Tranquility"

Harold G. Grainger, A.R.P.S.

probability of a better grouping. A little more patience and in a moment or two the lady would be almost level with the girls and boy—this would have been a more suitable time for making the exposure. With a number of people it is not always easy to release the shutter at the psychological moment, and in this instance the small child peeping down the road from the gateway took up much of my attention. I wanted her in the view yet she was too young to pay heed to what was required of her.

How delightful was this corner of the village with the sun, already setting behind the cottage roof, infusing the scene with unforgettable charm! In addition to the rarely beautiful effect as the sunshine caught the tops and edges of the masses of old-fashioned flowers and, shining through the red poppies made these glamorously richer than usual, the long, cool shadows thrown across the road provided necessary support to the composition. Neither the mother nor children were there, however, and such a scene without human interest was unthinkable. They were soon found however, and proved amenable to what was asked of them. It was my last plate, the finish of a long day, and, as has to be admitted, the picture is not quite the success hoped for.

From subjects featuring figures rather boldly let us turn to one in which the figure, though very, very small, is yet of paramount importance. This importance is due to the fact that the lady, in addition to being distinctive by virtue of her light dress, occupies the one position where such a note would be most telling; the point of convergence of all "lines" which make up the composition. Here, where the sluggish stream emerges from the shadowed group of trees bordering the meadow,—where masses of pale yellow flowers appear their brightest and where the hedge on the left dips to the water, is the key position,—the precise



"A Ruined Church"



"The Silent Mill"

Harold G. Grainger, A.R.P.S.

spot where the figure should be to add life to the scene to supply an important spot of light contiguous to the patch of dark tone. Without the judicious use of this tiny figure the subject must inevitably have been much less successful.

An example of an architectural subject with a landscape setting which is considerably improved by the addition of a light figure to provide a key to the tones in "A ruined church of Augustinian monks." Its introduction conforms to the principle in art practice that figures should be employed of set purpose. Apart from the fact that the picture would have been very insipid without this spot of light the figure is not, as it were, an anachronism for it is obvious that, sat on the broken wall with guide book in hand verifying some statement of architectural or historic detail relative to such a noble pile, the lady unconsciously draws the attention of the observer to the ruins. Contrast this attitude with the probably more usual one of the snap shooter of posing the lady to look upwards towards the camera, and consider how such a small thing may make a great difference.

The figure in "The Silent Mill" exemplifies, on the other hand, how easy it is to spoil a potential picture already sufficiently complete in subject matter to fully satisfy artistic requirements, by the addition of a figure which, to make matters worse, is not as suitable as it might have been. Apart from the fact that such an obviously town-dressed lady with fancy sunshade could have been better employed in such surroundings, (she might, for example, have been plucking, or alternatively arranging a bunch of wild flowers or grasses already gathered; or, seated, leisurely reading a book) a meadow featuring so much to interest and occupy the attention does not need the addition of a figure of this type. One example of many which could be named as more fitting would be a countryman with scythe mowing the long grass or weeds.

Readers will no doubt remember in the second of this series of articles, this landscape subject, but without a figure. The value of the illustration is such, in this article, that I trust its inclusion will be excused.

My concluding illustrations, "Early Morning on the Fish-Quay", are a couple of subjects which effectively demonstrate the value of simple backgrounds as against more complicated ones where figures are of first



"Early Morning on the Fish-Quay"



Harold G. Grainger, A.R.P.S.

importance, attention to which is drawn in an earlier paragraph. Both of the illustrations under review were taken within a couple of minutes of, and from view-points quite close to each other, but, as will be seen, the two figures are much more effectively presented than the single one, entirely because of background simplicity! How true it is that simplicity of presentation is, in many ways, the most effective where monochrome tones are the medium!

Solving The Print Hanging Problem

Nestor Barrett

ONE of the most vexing problems which the print committee of any club has to face is the best method of putting exhibition prints on the wall in the most presentable fashion. Like many another club, the San Jose Camera Club faced the problem at each of its public exhibits

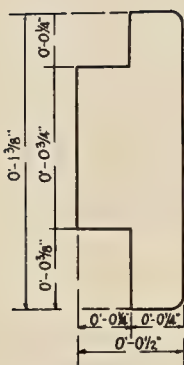


Fig. 1

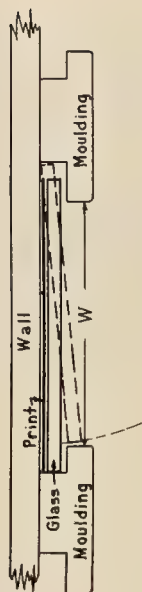


Fig. 2

and always used the conventional method; i.e. affixing the glass and print to the wall with four small nails driven at an angle.

This year the club was honored by being invited to present the first art exhibit in the city's brand new civic auditorium. The decision was made to present a 100 print show of members work. Mount standards were set at 14 x 17 and 16 x 20 inches, but the ruling was later modified to permit the mounts in both sizes to be hung horizontally.

The room in which the exhibit was to be placed was of ample size and the walls were especially prepared for the purpose, being of a soft wood covered with "monks" cloth. One of the members of the hanging committee, Mr. Ralph Wyckoff, a prominent architect, suggested that it would be a mistake to hang the exhibit in such attractive surroundings by using the crude, "rusty nail" system, and he proposed instead a new method, which was adopted and proved to be an outstanding success.

The secret of the new system lies wholly in an ingenious type of moulding designed by Mr. Wyckoff and shown in Figure 1. It will be observed that the moulding has a mortise cut in each face, but that they are of different widths. Figure 2 shows the moulding attached to the wall and the method of inserting the print. The mount and glass are grasped firmly in both hands and pushed up against the top of the mortise in the upper moulding. This permits their bases to clear the top of the flange



Fig. 3

on the bottom moulding. Now the ingenious part of the system becomes apparent. The print and glass cannot fall out on their faces because the flange on the top moulding being longer than the one on the bottom holds the mount in place.

The moulding should be made of soft wood and can be stained any color desired. It should be affixed to the wall with small finishing nails which will permit easy removal. In erecting the moulding the best plan is to cut a stick the exact width between the upper and lower sections to assure them being parallel from end to end as the allowable clearances are very small. This sounds difficult on paper but in practice proves extremely simple.

The proper width between the upper and lower mouldings at the points indicated by W on Figure 2 is easily calculated. It is $\frac{3}{8}$ of an inch less than the vertical height of the print. For example let us suppose it is desired to hang a group of 16 x 20 inch vertical prints; that is they must be hung with the 20 inch side perpendicular to the ground. We subtract $\frac{3}{8}$ inch from 20 inches. The result, $19\frac{5}{8}$ inches is the distance W for this size mount.

Figure 3 shows a view of the San Jose Club show which used the moulding for the first time. The results were highly gratifying. The committee was able to hang the show in one-third the usual time, the uniformity obtained won high praise from exhibitors and public alike, and when the show was over one man was able to remove it from the walls and pack it away with ease in three hours time.

Cinema Section

Edited by

William A. Palmer

The Photo-Electric Meter And Kodachrome

THE determination of lens setting for Kodachrome exposures by means of a photo-electric exposure meter has not been entirely satisfactory when the readings have been made by the ordinary technique of pointing the meter toward the scene to be photographed. These general overall readings have given accurate exposures in some instances and in other cases very inaccurate ones. When the readings have been taken holding the meter very close to the object to be photographed, the exposure indications have been somewhat more consistent, but even then once in a while a poorly exposed scene has mystified the photographer.

The photo-electric exposure meters now on the market were designed for automatic determination of exposure for black and white filming and their adaption to color work calls for a slightly different technique. The fact that there has been such a number of different opinions as to what is the proper film speed or sensitivity rating (Weston number or degrees Scheiner) for Kodachrome film shows an attempt to fit the instruments to color work.

In monochromatic or black and white photography we work with a very artificial medium of recording scenes. We have only varying degrees of light and shadow with which to portray the things we see. Light colors are recorded as white or nearly so and dark colors recorded as dark grey or black. In setting the camera for black and white we endeavor to admit an average amount of light to the picture area on the film so as to get a scene with average density. It is the amount of light reflected from the scene or the brightness of the scene which is important and it is this that the photo-electric exposure meters read. The modern panchromatic film is sensitive to all the visible colors in nearly equal amounts, but our eyes are most sensitive to the colors in the middle of the spectrum or the yellows and yellow greens. The photocells used in the exposure meters have a sensitivity to colors something like that of our eyes, that is, they are not affected the same by equal amounts of different colored light. This lack of equal sensitivity to all colors is not a difficulty as far as black and white film is concerned, for we

have the latitude of the film and the compensation for minor exposure irregularity in the processing.

Kodachrome film has to be made with almost exactly equal sensitivity to all colors in the spectrum and must be processed without compensation for inaccurate exposures. Furthermore, the color film has a limited latitude or range of light intensities that it can record. The photocell meters, not being sensitive equally to all colors as is the film, cannot always give accurate readings of the scene's brightness since scenes predominant in the color to which the cell is most sensitive will affect it more than a scene whose predominant color is in the region of little sensitivity. If the scene happens to have color to which the meter has medium sensitivity, the reading will be accurate if the proper film emulsion speed has been chosen.

The meter manufacturers are working on the problem of adapting their instruments to give more satisfactory direct readings for color film and it is hoped that they will soon have the problem solved. However, there is another way in which the present meters can be made to give entirely satisfactory and consistent exposure settings.

As mentioned above, the meter when aimed at the subject to be photographed measures the *brightness* of the subject or the *amount of light reflected*. This reflected light may be of any color or combination of colors. If we change our technique to measure the *amount of light falling upon the subject* or level of illumination available we can be measuring light always of the same color and thus rule out the variability of photocells to color.

The technique of reading the light intensity illuminating the subject is as follows: Procure a piece of show card or heavy paper with a neutral grey color of medium density. This should have a matte surface so that light is reflected evenly from its surface. Cut the card to a 10 by 10 inch square to use as a "target" at which the meter can be aimed. To make use of this card it is necessary to photograph a series of tests to find a new arbitrary emulsion speed (Weston number or degrees Scheiner) for the Kodachrome film. The emulsion speed given for using the meter in the conventional manner may or may not be correct depending upon the shade of grey chosen for the card. To make the tests hold the card in the same position as the subject so that it is illuminated by the same light as the subject. (A subject should be chosen for the tests which is as "average" as possible, meaning that the colors should be medium ones, not very light or very dark. People in medium color clothing in sunlight before a background of medium color foliage is a good subject). Hold the meter 8 to 10 inches away from the card and take a reading. Be careful that the meter does not cast a shadow on the card. The card should be held so that it faces toward the source of light, and the meter can be held a little low and pointed upward, aimed at the center of the card. Now set the meter for several different emulsion speeds, some higher and some lower than that recommended by the particular meter manufacturer for Kodachrome film. Taking the light value obtained from the reading on the grey card, expose two or three feet of film for each emulsion speed setting. Mark each scene by a scene slate or identifying number held in the camera range and keep a careful record of each emulsion speed used. Change no other conditions, camera speed and subject must remain the same and the tests must be made in succession within a short time so that the light conditions cannot change. The tests must also be made in the middle part of the day between the hours of 10 a.m. and 3 p.m.

When the film has been processed, the proper emulsion speed to use with the particular grey card chosen can be established. This emulsion speed can then be used for meter readings taken by the use of the grey card held in the light of the subject as in the test. Remember, however, to preserve the card, for to change and use another, even though it may look to be the same shade, will not always give accurate readings. As long as the same card is used and the reading taken properly by holding the meter close to the card with the card properly illuminated, the Kodachrome exposure indicated will be uniformly satisfactory for ordinary subjects. The few exceptions are as follows:

If the predominant colors or principal object in a scene happens to be very light in color it will be necessary to modify the exposure given by the meter by closing the diaphragm one half stop. Also if the scene has mostly dark colors, the diaphragm should be opened one half stop. On distant shots when the card cannot be placed in the same position as the subject, a reading should be made in light similar to that illuminating the distant shot. If the subject is within 100 feet, no alteration in lens setting need be made, but if over 100 feet the diaphragm should be reduced one half stop. For extreme close-ups the lens should be opened one half stop.

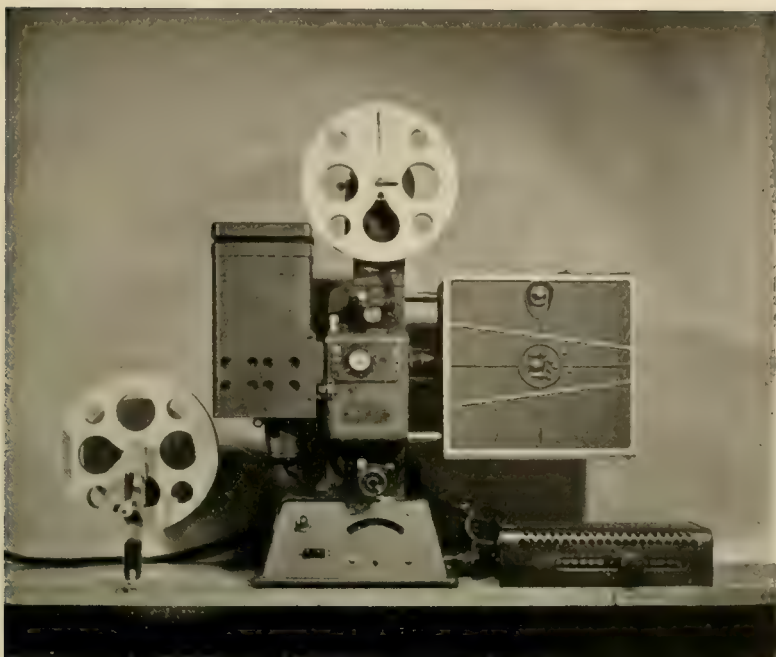
It may be recognized that the procedure outlined above bears a resemblance to the "brightest object" method of exposure determination described in the Weston meter instructions. It is also similar to the procedure outlined by P. C. Smethurst¹ of England for determining exposure on black and white film. The main difference in the method described here is the use of a grey card instead of a white one and the determination of a new emulsion speed to use with the particular grey chosen.

This method of the grey card "target" can be used with artificial light and the type "A" Kodachrome as well as with the regular film, but it is necessary to make another series of tests to find the proper emulsion speed of the film for the artificial light. If you still happen to be using the older regular Kodachrome (as contrasted to the new faster film identified by the sticker on the box) be sure that the tests for emulsion speed are made using that film. If in the future changes in film sensitivity are made it will be necessary to run further tests and determine the new emulsion speed.

¹Smethurst, P.C. *Exposing Cine Film*, Link House, London 1936

The Optical Printer

FOR the gadget loving home workshop cine apparatus builder the *ne plus ultra* of fancy equipment is the optical printer. It is this versatile machine upon which all the "effects" of present day Hollywood photoplays are made. The professional camera on the sound stage, in order that it may be perfectly silent, is stripped of most of its auxiliary mechanism such as the dissolving shutter. Further it is smothered in a big "blimp" or a "horseblanket"



Optical Printer

so that any dissolves or fades would be most difficult to make because the cinematographer cannot have direct access to his camera mechanism while it is running. In this respect the Hollywood cinematographer is on an equal basis with the average amateur camera owner when it comes to putting in transitions. The fades, lap dissolves, and wipes have to be put in after the scenes are shot. The owner of a super 16mm camera which has a fading device can consider himself especially fortunate.

The optical printer is the most elaborate of the three types of printers used for motion picture film. The two ordinary types, continuous and step, expose the raw film in contact with the processed film just as contact prints of still negatives are made. The optical printer is more like an enlarger in that the two films, processed and raw, are separated from each other and the image carried from one to the other through a lens. Usually there is no enlargement of the image, however, but merely a transfer of the same size image from one film to the other.

Illustrated here is a 16mm optical printer made by the combination of a 16mm projector and a 16mm camera. The projector end will be recognized as the old familiar model A Eastman Kodascope and the camera the equally familiar model A Cine Kodak. These two mechanisms, the first 16mm camera

and projector on the market, are still just as fine pieces of apparatus as they were when they were originally put on the market more than ten years ago. They have been surpassed in operating convenience, quietness, and brightness of projected picture, but the film moving mechanisms are as precise as any on modern machines. They are more ruggedly constructed than many of the new pieces of apparatus and therefore lend themselves admirably to service as printers and title cameras.

As shown in the photograph, the camera is mounted to the face of the projector by three heavy studs in the proper position so that a 47mm Cooke f 2.5 lens, mounted on the front plate of the projector, can focus the image of the processed film (in the projector gate) onto the raw film (in the camera gate). The two mechanisms are connected together through a flexible shaft which joins the two shutters, keeping them in synchronism. Because the lens inverts the image of the processed film when focussing it on the raw film, the two mechanisms must move the films in opposite directions for ordinary work. The film in the projector moves up while the film in the camera moves down, the take-up reel being on top. The projector has two shutters revolving in opposite directions on the same shaft, as screw driver wielding investigators can find out, and this made it possible to fix an arrangement whereby the loosening of one screw and the tightening of another will reverse the direction of the projector with respect to the camera, making it possible to make reverse motion scenes from normal ones.

The whole mechanism is powered by a constant speed induction motor through a spring belt so that it runs four frames per second ($\frac{1}{4}$ regular projection speed). There is a trigger and a catch arranged on the shutter so that the mechanism can be stopped instantly with the shutter closed and started again without causing one frame to receive any more exposure than the others. The mechanism runs so slowly that it can attain full speed after the trigger is released before the shutter opens. The slipping of the spring belt when the mechanism is stopped prevents stalling the motor.

The regular projection lamp is replaced by a 6-8 volt 32 c.p. auto headlight bulb with a sheet of ground glass diffusion between the bulb and the condensing lens. This bulb is operated off a 10 volt transformer located in the base and controlled by the same rheostat that used to serve the projector lamp. The only change is that the two resistances in this unit (one fixed, the other variable with the slider) are connected in parallel instead of in series. The ammeter is left in the circuit to indicate lamp brilliance.

With this optical printer it is possible to do many tricks and transition effects by the combination of reversal film scenes already processed on a new strip of reversal raw film threaded in the camera. Fades and lap-dissolves are made by dimming the printing lamp by the rheostat. Wipes of all sorts are made through the use of traveling mattes. From a scene normally photographed can be made a duplicate in which the action will proceed normally for a while, stop abruptly and "freeze" in one position, back up or repeat the same action over and over. Just how these things are done on the optical printer will be described in a future issue of this magazine.



"Wind In The Grass"

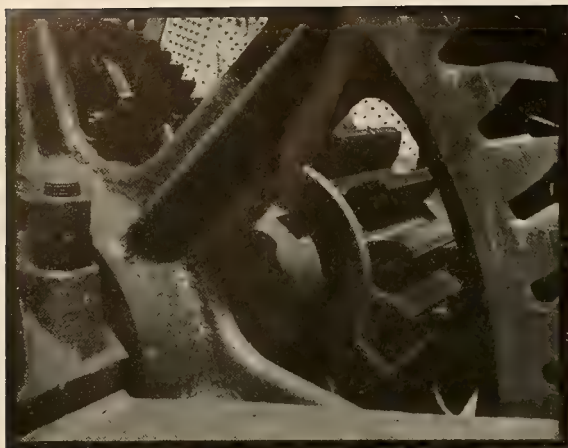
Advanced Medal Print

Don Wallace, A.R.P.S.

■ It is interesting to notice that pictures such as this, that is pictures which command a definite emotional response have found an increased use in advertising campaigns of late. The interesting thing about these campaigns from the point of view of the photographer is that the photograph has been called upon to carry practically the whole message of the advertisement. Outstanding example of such a campaign is that conducted by the Kool cigarette people. In these ads the picture occupied the whole of the advertising space and the only copy was the briefest possible caption stating that this picture would give some idea of how it felt to smoke Kools. There were pictures of snow banks and mountain streams and other things which strongly suggested two things, "coolness" and "freshness". The pictorialist can profit from the study of such pictures for in the degree in which they are successful in eliciting a strong and definite emotional response they are worthy of artistic consideration. Mr. Wallace's picture embodies beauty, vitality and the freshness of the out-of-doors and as such is an eminently successful piece of work either as an advertising or pictorial photograph. The lower part of the dress has evidently been held out by threads or draped in this fashion, for the force of wind that would so blow the dress is not evident in the grasses. This does not hinder its effectiveness as an advertising picture but is a drawback from the artistic standpoint. The picture would be better without the dark objects in the background, especially the one at the extreme left.

Data: 9 x 12 cm. Voigtlander Avus; Skopar lens; 1/100 sec. at F:9; pan film, print on Agfa Brovira glossy.

Second Award
Advanced Class



"Gears"

Gunnar H. Kampe

■ The interesting thing about this picture is that it gives such a strong impression of great size and strength in the objects shown without there being anything in the picture to establish scale. That is there is no object in the picture of known size so that the size of the other object may be seen by comparison. Observe that Mr. Kampe has obtained this effect by crowding the picture space to the very limit. From this we can learn that such crowding helps material to convey the idea of great size. The picture is well arranged and it suffers

only from lack of a really strong center of interest. Some will feel that the second row of gears from the right is the strongest point, while others will favor the area which constitutes the hub of the largest gear. Obviously the picture would be improved if it were possible to establish a more definite center of interest.

Data: Super Ikomat A; Zeiss Tessar F:3.5; 1/50th sec. at F:16, bright day; S.S. Pan. in D-76; print on E. K. Opal C. 11 x 14" prints on 16 x 20" mounts may be obtained at the price of \$6.00 upon application to Camera Craft.

Third Award
Advanced Class

■ Mr. Jaconelli gives us an exceptionally fine rendition of falling snow. One must carefully select just the right fall of snow for best results in this work. It must be heavy enough to show clearly in the picture. But, if it is too heavy or is driven too hard by the wind too much of the scene will be blotted out and an unpleasant amount of bare white space will appear. Exposure, of course must be adjusted so that the movement of the snow is not entirely stopped. We would like to keep all of the figures in this picture but we would also like to get rid of the spot of sky in the upper right corner. On the whole we prefer to trim from the right until the spot of sky is eliminated and to take a corresponding amount from the top to re-establish print proportions.

Data: 1/100 sec. at F:4.5; development 12 mins. in D-76; print on Agfa Brovira Royal in D-72.



"Winter"

G. Jaconelli

Fourth Award
Advanced Class

■ In many ways this picture has artistic qualities beyond any other in this group. We feel however that it was a mistake to work in the smoke-like column of highlights in the background running in an S-shape from the head upward. What justification is there for such highlighting of the background? Also it should be observed that this tends to set up a movement of line which carries the eye upward unnecessarily. There can be no doubt that the large expanse of background is right and proper for it helps to establish the mood of the picture by exercising a "depressing" effect on the figure. This does not mean however that the eye need be made to move through the expanse of background. We would prefer a smoothly gradated background running from dark at top to lighter at the base such as is found at the right edge of the present print, with possibly a slight highlight accent about the head.

Data: 5 x 7" Studio camera; negative on portrait film; contact transparency on commercial film; paper negative and final print on Defender paper; sepia toned.



"Despair"
Dr. Max Thorek, F.R.P.S.

Fifth Award

Advanced Class



"Weather Beaten"
N. S. Horton

directing their attention to the content, that is to the objects or ideas which the picture portrays. Once we admit that the really great picture must embrace all qualities to a superlative degree, we cannot see that there can be any justifiable criticism of either attitude so long as neither is held to be the only way or the complete way of looking at pictures. The content of this picture is admittedly very slight. It could have been greater had more emphasis been placed upon the rendition of textures.

Data: Leica; Summar F:2; 1/40th sec. at F:6.3, with Leica #2 filter; Agfa Finopan developed in Parker #78; Agfa Brovira Antique.



"Young Buckaroo"

Delbert E. Jack

Amateur Medal Print

■ Beginners who have been told that their pictures are good records but have no pictorial qualities are usually most dissatisfied with such a comment and demand to know wherein lies the difference. This picture may serve to illustrate that point. Imagine first how the average snapshooter would have handled this subject. The little fellow would, most likely be found standing stiff and straight in front of a most inappropriate background, holding out his chaps too obviously and grinning self-consciously at the camera. There would be nothing in the picture but the figure and the charm of that would be destroyed by unnatural posing and camera consciousness. How different things are in this picture. Bad posing is eliminated by catching the subject in action which also rules out camera consciousness, and the figure has been placed in an appropriate setting which has a certain dramatic quality of its own due to the clever use made of the shadows cast by the building. Observe that these shadows establish the composition and that the picture would be much less effective without them. Compare this picture to the average snapshot of a costumed child and the difference between the snapshot and the pictorial photograph should be readily apparent.

Data: Leica Model D; 50 mm. Summar F:2; 1/100 sec. at F:6.3, on E.K. Background film in Edwal 12; E. K. Vitava Projection in D-72.

Second Award

Amateur Class

■ Here is an excellent candid camera shot that so far as we can see has only one important weakness. We have often heard the rule that the point of greatest contrast between light and dark should occur at the center of interest. From this picture we can see that this, like all other rules must be applied with discrimination. At first thought it would seem that the brilliant newspaper behind the face would conform to our rule, but as we look at the picture it becomes evident that in practice the rule has been carried to excess. For here the brilliance of this newspaper actually interferes with our observation of the face by being a bit too brilliant. It is as if we were trying to look at this face with a strong light shining in our eyes rather than on the object. The effect is heightened, of course by the fact that the bright area created by the newspaper is small in size, has sharply defined edges and is surrounded by fairly dark tones. We get slightly more concentration on the figure if we trim from the top until the line of the molding is eliminated, and in from the left to remove the newspaper which cuts the left side of the print.

Data: Pupille; 50 mm. Elmar F: 3.5; 1/50 sec. at F:3.5 on Agfa Finopan in Edwal #12; chloro-bromide print partially toned.



"Home Town News"
Dr. Herbert Antoine



"Rat D' E' Gout"
J. Owen Campbell

Data: Speed Graphic; 1/10th sec. at F:8. on E. K. Ortho Super Speed Portrait film. by two photofloods; developed in D-76; E.K. P.M.C. #11, in D-72. 11 x 14" prints on 14 x 18" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Third Award

Amateur Class

■ It seems to us that Mr. Campbell has carried out his conception of this picture in remarkably successful fashion. His model fits the idea of the picture admirably, while the expression and pose is also well chosen. He has resisted indulging in exaggerations of costume and expression, a weakness very commonly found in pictures of this type. The lighting is fine and the print technically quite good. It is exceptionally difficult to make photographs of this kind carry conviction. Not so much we believe because of any necessary short-coming in the picture itself due to its photographic origin, but because the observer cannot bring himself to believe that a photographer would have the opportunity to photograph an actual character such as this. Consequently he pre-supposes that the picture is a staged characterization and it is difficult for even the best of photographs to overcome that disadvantage. For obvious reasons the painter has a freer hand in this field.



"The Riveter"
Frank Navara

Fourth Award
Amateur Class

■ Mr. Navara has worked out a very nice arrangement by cleverly selecting the most advantageous point of view when taking this picture, and the figure is placed just right. Our one disappointment in the picture is due to the fact that the steel girders are entirely lacking in texture. Admittedly it is difficult to obtain textural quality when photographing against the light, but with good technique it can be done, and of course, in this picture there are many areas which are well illuminated. With the improvement in fine grain films and developers we have noticed an increasing tendency among minicams to make larger and larger prints. This one is 11" x 14" in size. Quite often print quality and texture is sacrificed to large size which we believe is a serious mistake. There is no reason why this along with the great majority of minicam pictures would not be just as effective in 8 x 10" size, in fact more so since the picture would not show signs of being

stretched beyond its allowable limit of enlargement.

Data: Leica F; Elmar 50 mm.; 1/100th sec. at F:6.3, on E.K. Panatomic in P-Diamine developer; K-1 filter; Agfa Brovira Royal Soft, in D-72. 11 x 14" prints on 16 x 20" mounts may be obtained at the price of \$6.00 upon application to Camera Craft.

Fifth Award
Amateur Class

■ Mr. Utsumi has discovered a very interesting arrangement of tree forms and appears to have selected his point of view so as to present them to best advantage. At the points of deepest shadow the tree trunks are somewhat lacking in detail but otherwise the print is technically fine. We like the inclusion of the small boat at the left but could wish that the other two were not there. At least we would tone down the hull of the white boat seen through the trees since this presents a bright spot which catches the eye unnecessarily. Here again we believe the small negative has been enlarged more than is necessary (11 x 14") resulting in a slight loss of good definition. Data: Leica; 50 mm. Elmar; E. K. Panatomic in DK-76; E.K. P.M.C. #11, in D-64.



Kinji Utsumi

Monthly Competition

Contributors Please Note

Beginning in January of this year we asked that those contributors to this competition who would like to sell an occasional print, and that those who would like to exchange prints with other prize winners should provide the necessary information on the back of the prints sent in. On the whole a surprising number of contributors have indicated their interest by stating their willingness to exchange and by providing selling prices. We are not surprised that only a few prints have been sold since most photographers and the general public have not yet reached the point of purchasing photographs as they do the product of other artistic mediums. We have been disappointed however in the number of exchanges that have been effected. This is due we suspect to a certain bashfulness which causes all concerned to sit back and wait for the other fellow to make the offer of exchange. If we are wrong about this and there is no widespread interest in the exchange of pictures there is of course no reason for continuing the exchange feature of these competitions. May we therefore urge all those who would like this feature continued to make offers of exchange between now and the end of the year, for unless interest is indicated in this manner we will have no choice but to terminate these two features with the December issue.

Scoring for Club Trophy Cups

The following won points for their clubs in the advanced class: Don Wallace, Gunnar H. Kampe, G. Jacconelli and Dr. Max Thorek, for the Fort Dearborn Camera Club; and N. S. Norton, for the Montreal Camera Club. Only four points are allowed for Mr. Wallace's award since that brings his total to 15, the maximum permitted.

The following won points for their clubs in the amateur class: Delbert E. Jack and Dr. Herbert Antoine, for the Golden Gate Miniature Camera Club; Kinji Utsumi, for the Miniature Camera Club of Oakland; J. Owen Campbell, for the Norfolk Photographic Club; and Frank Navara, for the Pictorial Photographers of America.

Contributing Clubs

Aluminum Camera Club (New Kensington, Pa.)	Miniature Camera Club of Oakland (Calif.)
Amherst Camera Club (Mass.)	Montreal Camera Club
California Camera Club (San Francisco)	Niagara Falls Camera Club (N.Y.)
Camera Club of Richmond (Va.)	Norfolk Photographic Club (Va.)
East Bay Camera Club (Oakland, Calif.)	Photographic Society of San Francisco
Fort Dearborn Camera Club	Photo Pictorialists of Milwaukee (Wisc.)
Golden Gate Miniature Camera Club (San Francisco)	Photo Pictorialists of Springfield (Mass.)
Long Beach Camera Club (Calif.)	Pictorial Photographers of America
	Riverside Camera Club (Calif.)
	Taft Camera Club (Calif.)

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club	45
Los Angeles Camera Club	14
Pictorial Photographers of America	12
Photographic Society of San Francisco ..	7
Montreal Camera Club	3

Large Clubs Amateur Class

Golden Gate Miniature Camera Club.....	27
Photographic Society of San Francisco.....	19
Pictorial Photographers of America	13
Miniature Camera Club of Oakland	11
California Camera Club	7
Camera Club of Ottawa	3
Miniature Camera Club of Detroit	3
Miniature Camera Club of New York.....	2
Brooklyn Edison Camera Club	1

Small Clubs Advanced Class

The Pack Rats	41
Camera Art Circle	5
Whittier Camera Club	3
Washington Pictorialists	2
East Bay Camera Club	1

Small Clubs Amateur Class

Omaha Camera Club	12
Norfolk Photographic Club	9
Washington Pictorialists	8
Riverside Camera Club	7
San Jose Camera Club	7
Redlands Photo Pictorialists	4
Camera Club of Long Beach	3
Calgary Y Camera Club	2

Club Notes

American Artists Group

In our opinion this organization is bringing about the most significant of developments in American Art. Its avowed aim is to place the best American art within the reach of all of us. Surely this is an objective that meets with instant acceptance as an ideal, but one's first reaction is more than likely to be a discouraged, "it can't be done". But wait a moment. This group is now offering original prints of etchings, woodcuts and lithographs by a distinguished list of American artists at the almost unbelievable price of \$2.75 each. We need only mention the names of a few of the artists who have associated themselves with this movement to establish the quality of the work beyond the shadow of a doubt. Thomas Benton, Grant Wood, John Marin, Rockwell Kent, Allen Lewis, J. J. Lankes, Adolf Dehn, Reginald Marsh, Emil Ganso, George Biddle, Warren Newcombe, and more than fifty other noted artists.

The group is also offering greeting cards with reproductions of the work of its members at prices of 25c, 15c and 5c each. Thus for the first time you are offered the opportunity of having a greeting card that is truly the work of a recognized artist. The organization has published two fascinating handbooks each of which shows a large number of reproductions of the pictures which it is offering and gives lively and interesting thumbnail biographies of the artists. For further information address the American Artists Group Inc., 106-7th Ave., New York, N.Y.

The Four Print Exhibition Plan

Camera Craft has deliberately refrained from reporting on the above mentioned plan before now due to the fact that some misunderstanding arose at its inception. Those difficulties have now been cleared away to the satisfaction of all and since this is an experiment that at least deserves support as an experiment Camera Craft

now urges its readers to take part in the plan. The plan is sponsored by the Photographic Society of America and is under the direction of a committee of three appointed by the Societies president Dr. Max Thorek, Dr. David R. Craig being the Chairman with H. Richardson Cremer and William Howard Gardiner committeeman. Purpose of the plan is to provide a yardstick by means of which the quality of an exhibitors work may be estimated on a fairer basis than the mere quantity of prints hung.

The rules of the new contest are that no competitor will send more than four prints to any salon, and that he will send to at least ten open international salons between now and June 30, 1937. At the end of this period a compilation will be made which will show the percentage of acceptances. Prints sent to salons which by policy accept less than four prints from a single exhibitor (like the Royal) will not be counted. Prints hung by compliment, as in the case of judges, will not be counted. Exhibitors registered with the Committee who have been successful in ten or more salons before June 30, 1937, will be eligible for final listing.

Register immediately with Dr. David R. Craig, 1410-34th St., N. W., Washington, D.C. stating your intention of adhering to the rules of the plan as given above and stating the first exhibition to which you will send prints under this plan.

Bear Photo Service Exhibit

Each year the Bear Photo Service of San Francisco conducts an exhibit and competition of colored enlargements of pictures taken by its customers. This year there were over 800 entries. In this activity it seems to us that Albert Hanson, head of the firm, is rendering a distinct service to photography for the exhibit surely does much to stimulate a more serious interest in photography among many who have hitherto functioned only as the most careless type of snapshooter.

CAMERA CRAFT

We had the pleasure of acting as one of the judges this year and were impressed with the fact that many of the pictures showed plainly that the makers had made a distinct effort to achieve a photograph of pictorial quality. Only a few succeeded to any degree but the quality of the work was surprisingly good when one considers that all of the participants were beginners in every sense of the word. Awards were as follows:

Grand Award—Clarence J. Welch, 2314 Prince Ave., Berkeley, Calif.

Children's Class—Mrs. Maurice Giredo, 538-34th Ave., San Francisco, Calif.

Scenic Class—M. Luther, Berkeley, Calif.

Pets Class—Mrs. A. H. Wallace, 140 New Montgomery St., San Francisco, Cal.

Babies Class—Albert Mollering, 1135 Glen Ave., San Jose, Calif.

Adults Class—Mrs. B. Feiser, R.T. Box 38, San Jose, Calif.

Miscellaneous—O. W. Klein, 1895 Jackson St., San Francisco, Calif.

Glacier Pictures Wanted

Pictures of California Glaciers are desired by the Glaciers Studies Committee of the Sierra Club. These pictures will be forwarded to Washington where they will be co-ordinated with similar ones from all over America and in turn forwarded to Switzerland. Here they will be tied in with a world wide movement for the study of glaciers in every country. As they will serve a scientific purpose any data as to date, exact location and condition of the glacial ice will help. Those showing the terminal of the glacier and its surrounding walls are of special value. Please send pictures to the Glaciers Studies Committee, Sierra Club, Mills Tower, San Francisco.

The work of this committee is of considerable scientific importance and consequently Camera Craft calls upon the generosity of its California readers in support of this worthwhile activity. Please make the effort to go through your files of prints and negatives and send prints of all those subjects which would appear to be of value to the committee.

Traveling Show Available

The Hartford County Camera Club, Incorporated, of Hartford, Connecticut, has opened its fall season with a talk on Portraiture by Mr. Bradford Bachrach of the Bachrach Studios. He discussed the posing of subjects, lighting, background and illustrated his talk with natural models. At the close of the meeting he was kind enough to criticize portraits that had been brought in by members. The meeting was very enthusiastically received by the seventy-five members present.

At this meeting the Club voted to assemble a traveling show and the secretary would be glad to hear from clubs throughout the country who have a traveling show on tour and would be willing to include Hartford in its itinerary. Furthermore, if there are any clubs which would be interested in seeing Hartford's traveling show, a line to the secretary would be appreciated. Communications should be addressed to E. M. Reed, Secretary, 113 Ardmore Road, West Hartford, Connecticut.

Manitoba Camera Club

The Manitoba Camera Club opened its winter activities on September 28th, at which meeting an address on "Colour Photography" by the Dufay process was given, and a practical demonstration on mounting of prints.

The Executive reported a successful summer. While formal meetings had not been held, several excursions to points of interest were made by members.

A class in fundamentals of photography was started for beginners, and it is proposed to continue a similar class during the winter.

The Competition Committee report a full program of monthly and special competitions for the coming season, and in general an active period is looked forward to.

Flint Camera Club

The summer vacation period proved fruitful to the October meeting of the Flint Camera Club. 100% attendance was recorded with the inception of 6 new members. Inasmuch as the Flint Camera Club is only 8 months old and now numbers 23 highly enthusiastic members, the

officers of the Club feel highly pleased, and are highly anticipatory of an even more successful season than the preceding. The October meeting was highlighted by a paper on "Filters" read by Frank D. Fallain, a member of the Executive committee of the Club.

G. E. Conde, president of the Flint Camera Club prepared a demonstration of the effect of developers on emulsion speeds.

Third Annual Leica Exhibit at Rockefeller Center

The annual Leica exhibit which now plays a significant part in current exhibitions, not only to miniature camera enthusiasts but to men and women in every sphere of life, will be open to the public from October 20th to November 5th at Rockefeller Center.

The third annual Leica Exhibit will be the biggest candid miniature picture show that this country has ever seen. Over 600 new photographs will be included in the New York Exhibition, showing the work of photographers from all over the world. There will be an amateur group, and a special amateur prize contest will again be conducted. All visitors will be invited to vote on the best pictures. The photographers whose work will be exhibited include: Ivan Dmitri, John T. Moss, Jr., Willard D. Morgan, Charles Peterson, Rudolf Hoffmann, Barbara Morgan, James M. Leonard, Rockwell Kent, Tom McAvoy, Gilbert Morgan.

New Club

From Secretary Herbert Jackson, 1203 Hixson Road, Chattanooga, Tenn. we learn of the formation of the Chattanooga Camera Club. After a trial period of about three months formal organization and election of officers took place on Sept. 8th with Charles H. Shaw stepping into the presidency, Geo. F. Hull into the vice-presidency, and Mr. Jackson into the job of secretary-treasurer. The club is holding monthly print contests with judging by members, has now a membership of 36, and meets on the first and third Tuesdays of each month. Interested residents of Chattanooga or vicinity should get in touch with Mr. Jackson.

Queensboro Camera Guild

Although organized, only since last April, this lively group of thirteen amateur camera workers have laid the foundation of a club that is bound to go far. The start of a Club Print Collection has been made, representing some of the best work of the members and it is to be hoped that the collection will soon be making the rounds of other clubs.

Meetings are held every Tuesday evening, every other meeting being devoted to official business, print criticism, lectures and an open forum on interesting subjects. The in-between Tuesdays are laboratory sessions where actual camera work is enjoyed.

While desiring to confine itself to a small, active group of members rather than a large number of just "dues payers", visitors are always welcome at any meeting, all meetings being delightfully informal. The officers are, Carlyle F. Trevelyan, Pres.; Joseph Thein, Vice-Pres.; Robert Meissner, Secretary and Victor Odin, Treasurer. For further information address the president at 161-19, 59th Ave., Flushing, L.I., N.Y.

Lima Camera Club

The Lima Camera Club originated three years ago under the direction of Dr. F. G. Maurer, physician and amateur photographer. With Mrs. Nella R. Galvin, now widely known salon exhibitor, a number of their prints were placed on exhibition in the Public Library. Observant librarians noted the various inquiries, signing those interested in photography and desiring some sort of amateur organization. A month later, sixteen strangers appeared at the first meeting.

To date, the Club has settled to twenty highly active workers. Six have become salon exhibitors, including Pittsburg, Chicago, Los Angeles, and the various high class salons of Europe. One member won twelfth place in the 1935 Leica Candid Camera contest; another captured first place in the First Pittsburg Miniature Salon.

Meetings are held the first Monday of each month. There are no officers except an elected chairman and secretary. Meetings are devoted chiefly to print criticism

with occasional work nights, and lectures or demonstrations by guest speakers. The Club meets in the Public Library. Each year an exhibition is hung for the public. This year, the show will be in conjunction with the Annual Flower Show, a big yearly event.

A small assessment is made at each meeting covering the usual sundry expenses. The Club is open to all interested in amateur photography. There are no rules save one: "You must have a print;—if not a new one, an old one in the process of improvement".

New Club

Judging from the interesting correspondence which we have received from some of its members the newly organized Jacksonville Camera Club promises to be a truly live-wire organization. President J. H. Chaille reports that Program Chairman Dr. Albert Reilly has started off his regime with two bang-up meetings, the membership now totals 25 with every promise of future growth. Anyone interested in the activities of the club should address Pres. J. H. Chaille, 911 Graham Bldg., Jacksonville, Fla.

New Salon Plan

The Palo Alto Camera Club of Palo Alto, Calif., is sponsoring a Salon in a new and different manner. Entries are restricted to the western states and the appeal for prints is addressed to camera clubs rather than to individuals. Unique feature of the exhibition is this. Each club has been assigned an "index number" which is based upon the size of the club, the experience its members have had as exhibitors, etc. Thus a large club containing a high percentage of experienced salon exhibitors would be given the "index number" of 100, while smaller clubs would receive lower "index numbers". A limit is set on the total number of prints which a club may submit and this limit is in proportion to the "index number". The submitted prints will be judged by a jury of three just as if they were submitted by individuals and the club award for the best record in the salon will go to the club which comes closest to hanging 100% of the permitted total of prints which they are allowed to

send in. In addition to the club award there will be several individual awards. The jury will consist of Mr. P. Douglas Anderson, F.R.P.S., Mr. Fred Fry, and Mr. George Allen Young.

Exhibition

An exhibition of the work of west coast photographers will be held in the Mills College Art Gallery from October 25 to December 2. Judging from the impressive list of photographers which have been invited to take part the show will be of exceptional quality. Don't miss it.

The following newspaper item was clipped and sent to us by a reader.—Ed.

'Jinxed' Cameraman Proves Sensation at G.O.P. Rally Repeatedly Frustrated, Photographer Gets Frenzied Ovation When "Shot" Finally Clicks

An ordinary, workaday newspaper photographer stole the show from the big-wigs and the political leaders at the Republican state convention here yesterday.

Congressman Homer Hoch was speaking, very eloquently and with expressive gestures that appealed to this photographer's picture sense. So the photographer strolled out on the Arcadia stage, camera and flash bulb equipment set for a hurried "shot." He pressed the button—and nothing happened. There was no flash, there was no click of the shutter. The camera was a hopeless object of inanity.

The astounded photographer backed off the stage, turning his camera in his hand, a puzzled expression on his face.

Hoch interrupted his speech long enough to give a sidelong glance to see what was causing the few snickers that arose from his audience.

Experiments Work

Backstage, the photographer made some experimental flashes. The camera worked perfectly. The flash bulbs exploded with their customary glare.

So the photographer loaded up again, marched out upon the stage and essayed another try.

Again the bulb was dead, the shutter stuck.

The photographer retreated in considerable confusion. The snickers were becoming somewhat more audible.

Backstage again the photographer put over a successful plea to a brother of his craft and borrowed the brother's camera.

Confidently this time and in the full majesty of purpose he strode onto the stage.

Congressman Hoch's arm was upraised as he stressed a point.

"Hold it a moment, Mr. Hoch," the photographer murmured as he squinted through the peep sight and framed the congressman in the finder.

Hoch obliged. The audience watched, entranced. The photographer pressed the trigger of the borrowed camera—and nothing happened.

Rages Backstage

Backstage again he raged. The owner of the camera could not believe it and demonstrated his disbelief by showing that the picture box worked perfectly. And the photographer's camera was easily

operated, too, and the irony bit deeply into his soul.

"I'll have that picture—or break a neck," said he to himself. "If I don't get this picture I never will live it down."

He sallied out with his own camera. A thunder of applause greeted his fourth appearance on the stage. Hoch saw him coming. Hoch paused in the midst of his speech.

"Folks," he said to the audience, "It seems that we just must have this picture so wait a minute while I pose."

The undaunted photographer took his stance, aimed, pressed the trigger—and the apparatus worked with a blinding flash of light. The audience cheered mightily.

When the tumult had subsided, Hoch said:

"That probably was a New Deal camera and it doesn't work well on Republican subjects."

Notes and Comments

A NEW FINE GRAIN DEVELOPER FOR SUPERIOR GRADATIONS

By Edmund W. Lowe, Ph.D.

(The Edwal Laboratories, Chicago)

It is generally recognized that, for the production of very fine-grained negatives, the paraphenylenediamine-glycin developers (such as the Sease #3) are supreme. On the other hand, one of the objections to these developers is that they tend to produce negatives which lack gradations, and it was to remedy this defect that the diamine-glycin-metol formulas (Edwal 12 and 16) were worked out. Many photographers, however, must have finer grain than the diamine-glycin-metol developers will give, and at the same time would like to have good gradations in their negatives. We have worked out and are pleased to be able to publish the formula for a developer that will give as fine grain as the best of the diamine-glycin developers and as good gradations as the Edwal-12. It will be known as the Edwal-20, and will require less exposure to produce negatives of a given density

than the Sease #3, but somewhat more exposure than the Edwal-12. The formula is:

Water (distilled).....	1 liter (1 quart)
Gradol*.....	5 grams (75 grains)
Anhydrous Sulphite.....	90 grams (3 ounces)
Diamine-P**.....	10 grams (150 grains)
Glycin.....	5 grams (75 grains)

*Gradol (gray-dol)—a derivative of para-amidophenol. Not previously marketed as a photo-chemical.

**Paraphenylenediamine base (not the hydrochloride).

Developing times for 35 mm. films:

22 min. at 65°; 18 min. at 70°; 14 min. at 75° F. on all the common Eastman, Agfa, Gevaert, and Perutz films with the following exceptions:

Super-X: 26 min. at 65°; 22 min. at 70°; 18 min. at 75° F.

Panatomic and Finopan: 14 min. at 65°; 12 min. at 70°; 10 min. at 75° F.

Micropan: 11 min. at 65°; 9 min. at 70°; 17 min. at 75° F.

This developer is intended for the production of negatives that can be enlarged

up to 30 diameters, but if care is taken to use the shortest exposure that will give shadow detail, negatives can be produced that will stand enlargement to almost any diameter without the appearance of grain.

The solution keeps well and can be used until 10 or 12 Leica, Contax or vest pocket rolls have been developed in one liter. The developer works best at 70° when fresh but after six or seven rolls have been developed it may be used at 75° since the increased activity of the developing agents at the higher temperature helps overcome the restraining action of the bromide which is absorbed from the emulsion during development of the first rolls.

William Mortensen School of Photography

The superb quality of Mr. Mortensen's photographs need not be stressed in this notice since readers of this magazine are well aware of their unusual beauty. In his books and articles Mr. Mortensen has also displayed his very real talents as a teacher. It is rare indeed to find an individual with great creative talent, who is also a fine teacher. It is because Mr. Mortensen possesses both these capacities to such a marked degree that we recommend his courses unreservedly. All students receive private and individual instruction from Mr. Mortensen personally. Write to William Mortensen, Laguna Beach, Calif., for full information.

Fotoshop Services

At the Fotoshop's cinema film processing laboratory at 136 West 32nd Street there was considerable activity during the months of March and April incident to the setting up and testing of new machinery for straight line processing of 16mm and 35mm motion picture film. An additional floor in the building was taken over and the new system insures not only faster processing but also more thorough and complete attention to detail.

Featured in the Fotoshop's film service is the furnishing of Eastman's Super X panchromatic emulsion in 16mm size. This is processed and delivered to the consumer as a negative and positive for what would ordinarily be the cost of a single reversal film. The outstanding features of

the Super X emulsion such as fine grain, high speed, are thus brought to cinema camera owners at minimum cost with the great advantage of having a negative from which any number of positives can be made free of scratches and projection faults.

Agfa Ansco Announces New Portrait Enlarging Paper

A new and important addition to the line of Agfa Ansco photographic materials has been announced with the introduction of Agfa Portrait Enlarging paper. This new paper, a moderately fast projection material, has been particularly designed for portraiture. Its emulsion, coated on extra heavy stock, gives pleasing, warm-black tones which, if desired, may be beautifully toned by the usual methods.

Portrait Enlarging paper is available in three attractive surfaces on both white and ivory stock. The surfaces include Kashmir, the highly popular pebbled surface with a slight lustre; Matte, a smooth surface without sheen; and Fabric Rough, an attractive rough surface without sheen. Agfa Portrait Enlarging is being supplied in normal contrast which may be modified by manipulation in exposure and development. Portrait Enlarging is offered in all standard sizes at regular Indiatone double weight prices. It is manufactured by Agfa Ansco Corporation in Binghamton, New York.

New Model Foth-Flex

A Foth-Flex with f2.5 lens is announced by the Home Camera Company of New York for delivery on or about September 15.

The price of the f2.5 Foth-Flex will be \$72.50—a matter of \$12.50 difference between it and the cost of the standard model Foth-Flex which now lists for \$60.

Full particulars can be obtained by writing to Home Camera Co., 129 West 22nd St., New York City.

Mr. Robbins Takes Over

Mr. Samuel H. Robbins, the genial and enterprising young man who seemed always to be explaining the intricate mechanism of some photographic device at the camera counter of Lugene's New York, announces that he is now the proprietor



A corner of the newly completed display room at the Folmer Graflex Corporation plant at Rochester, N.Y. showing a portion of the photographic salon now on exhibit.

of Boozer's Camera House, 145 East 60th Street, New York. Mr. Robbins indicates, that he will transform this establishment into a most modern institution with chrome fittings, Neon signs, and other up-to-date conveniences. He will be ready at all times to offer the amateur the benefit of his seasoned judgment in things photographic.

Graflex To Offer Traveling Salons

Outstanding prints from Graflex users the world over are now being exhibited in the newly completed display room of the Folmer Graflex Corporation at Rochester, N.Y. A great number of Graflex owners have voluntarily sent in prints whose excellence have won them places in this photographic salon.

Because of the many fine prints received from owners of Graflex and Graphic cameras, the Company plans the inauguration of a series of traveling salons for exhibition in various metropolitan cities throughout the country, using the main salon at Rochester, N.Y. as the source of supply for these traveling exhibits.

Folmer Graflex Corporation extends an invitation to all Graflex and Graphic users,

whether nationally known or not, to send in prints which in their estimation might have sufficient photographic worth to hang in the main salon and then in one of the traveling salons.

"We believe that many an amateur photographer would like to see his best prints receive national recognition," states a Graflex Corporation spokesman. "Our main salon and the several traveling exhibits which we contemplate, afford admirable opportunities for these camera enthusiasts to receive such recognition. We will welcome the receipt of outstanding prints from any Graflex or Graphic user and will be more than glad to carry a credit line beneath each one selected for these exhibits.

"Prints should be mounted on 100 or 120 point board, the mounts to be 15" wide by 20" high. Or, unmounted prints of a size to fit these dimensions may be submitted in which case, we shall have them mounted ourselves. Complete data for each picture will be welcome."

Good News for Berkeley, Calif.

Residents of Berkeley, Calif., will be happy to learn that due to a greatly ex-

panded business The Camera Shop, formerly at 2023 Shattuck Ave., is moving into larger and more convenient quarters at 2011 Shattuck Ave. The Camera Shop has been in business at their old address since 1914 and has the honor of being one of the oldest "photographic specialty" shops in the city. William Blewett, the proprietor reports a very marked increase of interest in "things photographic" in his city. In the new location, with greater floor space and modern fixtures Mr. Blewett plans a more attractive display of his large up-to-date stock and more efficient service to his customers. In the new store customers will find a complete stock of photographic supplies, all the popular lines of cameras, and they will be offered an efficient finishing service, with all the work being done in The Camera Shop's own laboratories which are equipped with the most modern machinery. There will also be a corner in the new store where the latest books and periodicals may be perused.

New Finopan Roll Film

A new fast fine-grain panchromatic roll film designed especially for users of small folding cameras has been announced by Agfa Ansco Corporation. The emulsion of the new film, Finopan, is fully panchromatic with sensitivity to all colors and is nearly equal to the supersensitive types like Agfa Superpan in speed. Surprising as it may seem in view of its speed and color sensitivity, the new Finopan roll film is also a fine-grain material and produces negatives that will stand extreme enlarging without showing objectionable graininess. These characteristics make Finopan an ideal film for outdoor photography with small cameras. Two further important qualities of the new Finopan roll film are an improved brilliance and an effective method of anti-halation protection. The new Finopan is at present available in three sizes: A-8 (same size as 127) for cameras taking pictures $1\frac{5}{8} \times 2\frac{1}{2}$; PB-20 (same size as 620) and B-2 (same size as 120) for cameras taking pictures $2\frac{1}{4} \times 3\frac{1}{4}$ inches. Finopan roll film is manufactured by Agfa Ansco Corporation in Binghamton, New York.

The Lios Grandoscope

A new instrument which should certainly prove a valuable addition to the kit of the discriminating photographer is the Lios-Grandoscope, made by the manufacturers of the famous Lios Exposure Meter.

The Grandoscope is a uniquely thought out instrument which informs its user simply and precisely as to the correct exposure time for making enlargements.

In appearance, it is a "pipe" shaped device with an eyepiece at the end of a focusing tube which slides into a longer tube fitted into the "pipe" shaped part containing the field. Unlike optical exposure meters used for gauging the exposure factor in photography, the Grandoscope is not aimed in the direction of the subject to be photographed which in Enlarging would necessarily mean the negative. The translucent glass screen situated on the top of the bowl is placed directly underneath the Enlarger's light source.

The field of the Grandoscope contains 16 numbers, 3M, 2M, 90, 60, 45, 32, 23, 16, 11.8, 6, 4, 3, 2, 1.5 and 1. The last visible number seen is the key to your correct exposure.

A booklet accompanies each Lios Grandoscope, consisting of a number of tables arbitrarily marked B-2, B-3, B-4, etc. These designations indicate the sensitivity of various types of enlarging paper—which must be pre-determined by means of test exposures. In a horizontal line on the top of each table are listed various paper sizes ranging from 6 x 9 to 18 x 24. In a vertical line running along the left edge of the table are the numerals seen in the field of the Grandoscope. Underneath each of the paper sizes are listed exposure times for each of the factors in the Grandoscope field. Let us assume that the paper used has B-2 sensitivity, that it is a 9 x 12 sheet, that the last visible number on the Grandoscope field is 16. You go down the column headed by 9 x 12 to the line which bounds 16 and the number 3 which appears at that junction is your exposure time in seconds.

Explanations are generally tedious—the Lios Grandoscope is actually and exceedingly simply operated instrument and should prove a boon to all those who do

their own enlarging. Its user will soon find that its initial cost will be readily absorbed in the savings effected in paper and time. For further information on the Lios Grandoscope, write Burleigh Brooks, 127 West 42 Street, New York.

Kodachrome, Type A, Announced for Cine-Kodak Eight, Bantam Special, And Kodak Retina

When Kodachrome, Type A, was announced for making 16mm. movies indoors with Photoflood lamps without the aid of a filter, the response was spontaneous and the new full color film was universally acclaimed as one of the greatest forward steps in home movies.

And now, Kodachrome Type A, is announced by the Eastman Kodak Company for indoor movies in full natural color with Cine-Kodak Eight and for "stills" with Kodak Bantam Special; Kodak Retina and similar miniatures.

This new film is color balanced to compensate for the quality of light supplied by Photofloods for movies and Photoflood or Photoflash lamps for "stills." Consequently, no filter is necessary for indoor pictures with such artificial light.

Kodachrome, Type A, may be used in the daytime too by placing a Type A Kodachrome Filter for daylight over the camera lens.

Thus, this new Kodachrome conquers new fields in amateur color photography—movies and stills.

The retail price of the 25 foot Cine-Kodak Eight roll, including the processing, is \$3.75, the same as for the regular 8mm. size announced last May.

Kodak Bantam Special rolls, known as K828A, carry eight exposures and list at \$1.75 a roll. Kodak Retina and similar 35mm. miniature "still" cameras take Type A Kodachrome, K135A rolls having 18 exposures and retail at \$3.50 a roll. These prices include processing and return postage within the territorial limits of the United States.

Photoflash Reflectors

Next to accuracy of timing the most important part of a photoflash synchronizing instrument is the means provided for reflection of the light. The use of the

aplanatic or multi-mirrored reflector by the Mendelsohn organization has resulted in several thousand of these being in use all over the world. The advantage of the aplanatic reflector as supplied with Mendelsohn apparatus is that it directs the light of the burning photoflash lamp in the direction of the picture being made, the shell or design of the reflector being such that light cannot escape from the sides, but must proceed forward covering an area wide enough to include those objects which appear on the ground glass. The efficiency of the Speedgun aplanatic reflector is about twice that of the flat or "standard" photoflash reflector. More and more amateur and professional photographers are beginning to realize how much better their exposures are lighted after using an aplanatic reflector.

It is safe to say that light which you can see when standing at the side or behind a photoflash synchronizer is wasted, besides being a strain on the eyes. The aplanatic reflector prevents side emission of light and therefore is a more comfortable one to employ for both the operator and bystanders.

The Mendelsohn organization announces that in addition to supplying the Speedgun aplanatic reflectors for its own equipment, also offers the reflectors, (with adapters) for use with any other make of photoflash apparatus. Information or further details concerning this may be obtained by writing to S. Mendelsohn, 202 E. 44th St., New York City.

New York Institute of Photography Starts Winter Lecture Schedule

The winter lecture-demonstration schedule at the New York Institute of Photography, 10 West 33 Street, New York City, will be inaugurated on Thursday evening, October the 29th in the studios of the Institute when Morris Schwartz of the Kalart Company gives a practical demonstration and lecture on the subject of synchrosunlight and general Photoflash photography.

The use of Photoflash outfits for daylight pictures is becoming increasingly popular for many types of outdoor photography, and in its aim to keep its stu-

dents advised on the latest photographic developments, the New York Institute of Photography has arranged this special lecture. Mr. Schwartz is a recognized expert in Photoflash and speed gun practice, hence the students hearing this talk will secure first hand knowledge of this new method of photography.

Students at the New York Institute of Photography are thus assured of up-to-date and practical information, for not only are the latest methods taught in the regular classes, but special lecturers are secured to impart their specialty to the students on certain evenings during the winter months. By this practice, which has been in existence at the Institute for a number of years, the students are given a broad fund of photographic knowledge. Impartially, their information comes to them from various sources and thus enables them to better adapt themselves to the field of photography in which they wish to specialize.

Other demonstration-lectures, scheduled for early dates, include those of Pat Terry, chief photographer for **News Week** magazine and Harold Dumont of the Defender Photo Supply Co. For full particulars about any of the New York Institute courses, write to the New York Institute of Photography, 10 West 33 Street, New York City.

New Folder Lists Weston Film Speeds

Up-to-date speed values for all films and plates in common use, both for stills and motion pictures, are given in a new folder just published by the Weston Electrical Instrument Corporation, Newark, N.J. The list of almost 200 Weston speed ratings includes the newer color films as well as black and white emulsions of domestic and foreign manufacturers, with values for daylight and incandescent light.

In addition to film speed ratings, the folder contains suggestions for exposure of color films to aid color fidelity within the more limited exposure range of this type of film. Copies of the new folder are being mailed to all registered owners of Weston meters. Other Weston owners whose names are not now on this list may obtain copies by writing the manufacturer.

Adjustable Film Tank Announced by Eastman Kodak Company

Amateur photographers who prefer doing their own developing and printing should welcome the new Kodak Adjustable Film Tank just announced by the Eastman Kodak Company

In the darkroom the protective paper covering and the trailer paster are removed from the exposed film and the film wound on a reel. The reel of film is then immersed in the tank of developer and the cover put in place. The balance of the developing process, including washing and fixing, may be carried on in daylight for the film remains in the tank until ready for drying.

The most popular Kodak Film sizes may be accommodated: 616 and 116, 620 and 120, 127, 828 (Kodak Bantam Special and Kodak Bantam) and 135 (Kodak Retina, Contax, Leica and similar miniature cameras). The change from one film size to another is accomplished by a simple shift of the upper flange from one



notch in the flexible steel core to another.

The tank itself is one-piece, stainless, acid-resistant steel and will hold 32 ounces (one quart) of developer. For developing the narrower width films, 135, 235, 435 or 828, but 16 ounces of developer is required.

The tank cover and reel flanges are of durable molded material. The cover is designed so that the necessary solutions or rinsing water may be poured in or out through a light-trapped opening without removing the cover itself.

A well-illustrated booklet, included with each tank, gives the amateur worker complete directions.

Mikut Color Camera

The Photo Marketing Corporation who have the exclusive representation of Mikut color camera and products in the United States have designated the Raygram Corporation, 425 Fourth Avenue, New York, N.Y. to be the distributor of these products in the United States.

Anyone interested in natural color photography may obtain full information by writing to the Raygram Corporation for descriptive literature.

Natural Color Paper Prints From Kodachrome

The Ruthenberg Color Photography Co., 4961 Sunset Blvd., Hollywood, Calif. announce that they are now prepared to make paper prints in full natural colors and in enlarged sizes from Kodachrome film and we assume from other transparency processes as well. Thus it is now a simple matter for the amateur photographer to have a large size paper print in full natural color of his own exposures. We are sure that all will agree that such a print would look pretty swell when framed and hung on the living room wall. For full information as to costs and sizes please address the company at the above address. The prints are made by the Ruthenberg Colorstil Process and the company is also marketing the supplies necessary to carry out this process. In brief it works as follows: The Colorstil Kit includes the Colorstil stripping film in the three primary colors, yellow, blue and magenta, the color being incorporated in the emulsion; transfer paper, and stock solutions A and B. The other five stock solutions required are easily made up by the photographer from chemicals which most will have on hand. Prints are made on the Colorstil film either by contact or enlarging from three color separation negatives. These negatives can be made either direct or from any transparency. These prints are then developed and fixed together. The unhardened emulsion is then removed by washing in hot water and the excess of black silver is removed by treatment in the prescribed bath. At this point the color balance can be checked by super-imposing the three film prints

and viewing them by transmitted light. If any color is too strong it can be reduced by washing it down with hot water. The colors are then made permanent by treatment in the appropriate bath. At this point color brilliance can be increased if desired by treating the yellow and red films in a specified bath. The films are then dried and subsequently a piece of transfer paper and the yellow film are soaked together in water, squeezed in contact put under pressure and dried. When dry the film strips off leaving the yellow image on the paper. This process is repeated with the blue film and then the red film. The finished print will have a glossy surface but this can be given a semi-matte appearance by soaking in hot water.

The company has published a pamphlet which describes the process in detail and states its willingness to supply information on any aspect of color photography. A large part of its business consists in making paper prints in natural colors for commercial or portrait photographers from their own negatives or transparencies. Full information on any aspect of their services will be supplied to Camera Craft readers free on request.

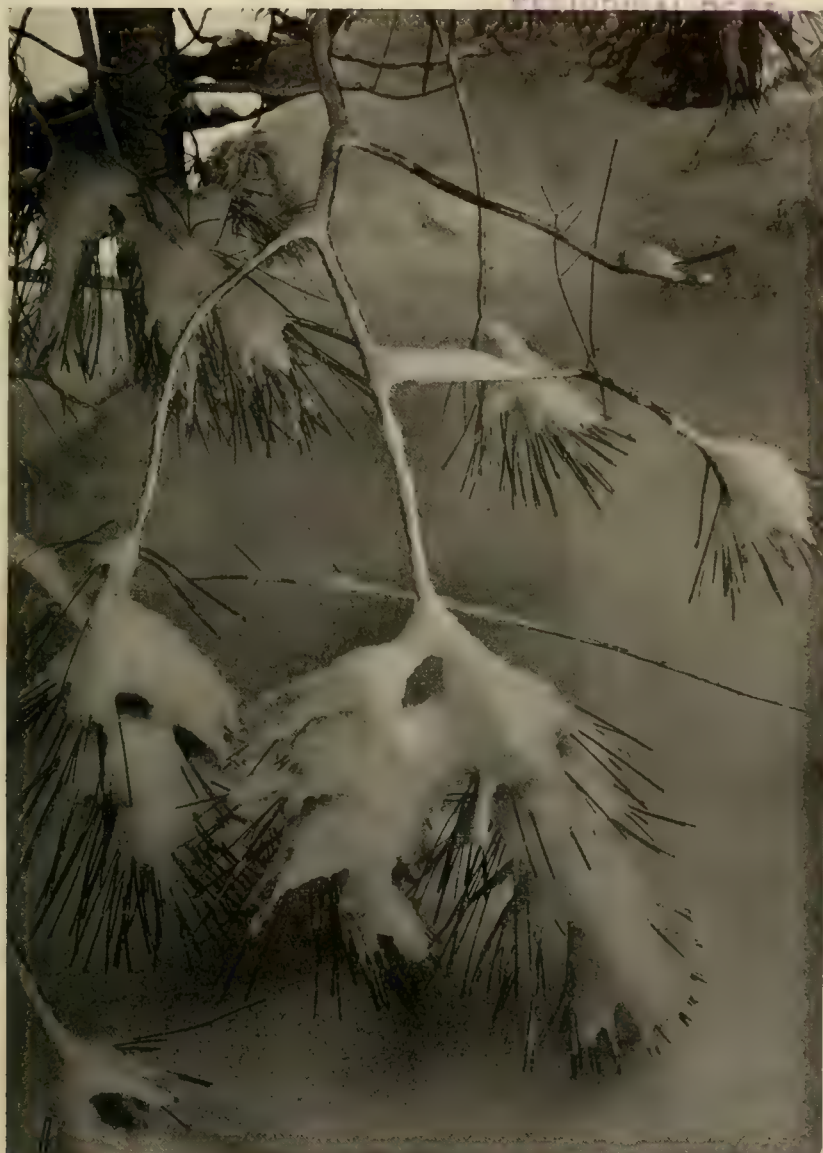
Kalart Synchronized Range Finder

Experience with the miniature camera has shown that extremely sharp focus can be achieved very rapidly by means of a range finder coupled to the lens. Kalart now offers a device that brings such rapid and accurate focussing to the Speed Graphic cameras. The range finder is fastened to the side of the camera to the right of the eye-level view finder so that no shifting of camera position is necessary. One can quickly check the focus through the range finder, and then by simply directing the eyes through the view finder instantly line up the shot and trip the shutter.

The device will shortly be available for other types of bellows extension cameras than the Speed Graphic. It can be adjusted to work with lens of 13.5 cm. 15 cm. or 16.5 cm. For further information address The Kalart Co., 58 Warren St., New York, N.Y.

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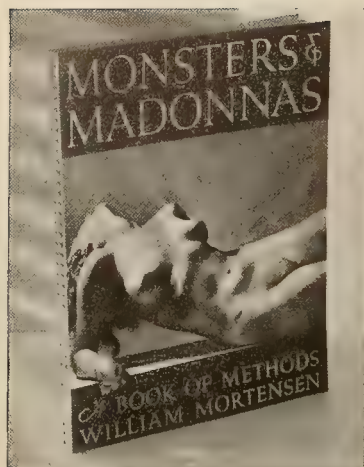


"Winter—Yosemite"

Ansel Adams

December 1936
JURY
THE MINIATURE NEGATIVE
NOW AS PICTORIAL MATERIAL

PRICE 25c
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MONSTERS & MADONNAS

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by

WILLIAM MORTENSEN

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for a very narrow margin. • The pages are arranged so that no printing appears on the reverse side of any picture. • Thus pictures may be removed for framing without otherwise disturbing the continuity or completeness of the volume. • In several cases the type page carries a small illustration showing the picture which appears on the facing page as it was originally photographed.

WHAT THEY SAY: "This is one of the outstanding photographic publications of the year."

—American Photography

"The eminent pictorialist of the West has here presented a one-man show that will delight his followers, not only in the fine presentations of his art, but in the daring and caustic comment that precedes and accompanies them."

—The Camera

"This is one of the most absorbingly interesting works on photography, and at the same time one of the most instructive, that we have read in many a day."

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Trial By Jury

William Mortensen

The frontispiece at the left is one of more than 250 new illustrations which Mr. Mortensen has made during the past year for his forthcoming book on the problems of posing, title, price and publication date of which will be announced in the next issue. This book is the first comprehensive work supplying much needed information on the subject of posing and directing models.—Ed.

THE FIFTH ANNUAL SALON OF THE PITTSVILLE CAMERA CLUB. ENTRANCE FEE ONE DOLLAR.

So reads the handsomely printed announcement. With high hopes or cynical misgivings you bundle up a couple of your best prints, fill out the attached entrance blank, enclose a dollar bill, and send them all off to Pittsville. In due time you either receive them back with a perfunctory word of thanks or else learn (to your astonished gratification) that they have been accepted.

Beside yourself, about a thousand other photographers have hopefully sent along examples of their work. What is the system used to sort through this mass of pictures and determine which are worthy to adorn the walls of the Pittsville Salon? And who are the great minds that administer the system?

* * * *

For several days preceding the opening of the Salon, a small group of people have been circulating about a room lined with prints, placing on each their badge of acceptance or token of disapproval. Finally they discover themselves involved in the usual emergency. They have accepted more prints than the galleries of the Salon can accommodate, and consequently are obliged to find reasons for throwing out a third of their selection. They are now engaged in a somewhat distracted huddle; for they must eliminate two hundred prints before dinner time. Let us examine these people who control the destinies of so many pictures.

There is Miss Kite, who has been on the jury ever since there was a salon in Pittsville. She is an ex-school-teacher who gives to the affairs of the Camera Club the same grim enthusiasm that she gives to the Girl Scouts of Pittsville. She thanks God and her ancestors that she is from Boston. At the latter city she acquired her art training. She no longer does water colors, but is fond of taking her antiquated Kodak to the park and taking pictures of the swans. She is much disturbed by nudes, but a bit of sentiment or still-life is enthusiastically clasped to her chaste bosom.

Her best friend in the Camera Club is Mr. Blossom, another member of the jury. Mr. Blossom, a small grey gentleman, is very loquacious, and regrettably given to gossip. He recklessly admits to a personal interest in the nude—provided, of course, that the model's eyes are modestly downcast and her figure is discreetly mitigated by diffusion and crepe de chine. He shares Miss Kite's enthusiasm for swans.

The third member of the jury is Mr. Spraddle. He represents the Chamber of Commerce point of view. As the chief promoter of the Pittsville Salon, he has dedicated himself to letting the world know that "We here in Pittsville appreciate the finer things". Mr. Spraddle is red of face, hearty of manner, and prides himself upon being "broad-minded". To the disputes of the other members about such matters as Pure Photography and Processed Photography, he replies, "I don't know anything about all that, but I know what I like". Among the things that he likes are: dogs, children blowing bubbles, nudes (of the boudoir variety), and candid camera pictures.

John Easton is the fourth member. He knows photography from alpha to gamma. To him the principal interest in photography lies in what goes on inside the camera and within the dark room. The ideal end-product of these photo-chemical processes he finds in a glossy print of wiry sharpness. Any evidence of control, any of the "controlled processes", he regards with disdain, if not with loathing. (Few people know that he has a bromoil press at home, gathering dust in the attic.) His most frequent comment is, "What a pity it wasn't made on glossy paper." Naturally, with his predilection for the purely laboratory side of photography, Mr. Easton is less concerned than the others with subject matter, but he is apt to express a preference for skyscrapers, steam-shovels and arrangements of sugar-cubes (provided they are presented in clean glossy prints).

Morton Williamson is a representative of the "controlled" school of photography. He welcomes carbros, bromoils and gum prints. He dismisses Mr. Easton's glossy prints with disdain (and a little envy of their technical competence). He distrusts violent modernity in pictures, and displays more than a little nostalgia for the ways of the old masters. In his choice of pictures he shows a penchant for rather sensational subject matter, for scenes of carnage and torture, and for nudes.

The last member of the jury is Mr. Verdegris. Mr. Verdegris is an artist that Mr. Spraddle has drafted in order to give an arty flavor to the Pittsville Salon. He indulges very little in the deliberations of the jury, but mostly mopes in the corner, nursing a very foul pipe. When



"Moonlight"

William Mortensen

pressed for an opinion, he gives a snort which clearly says "Pfui, photography!" and then remarks, "No composition." To which Mr. Blossom protests, "No composition? Oh, come, come, Mr. Verdegris!" And Mr. Spraddle hastens to remark placatingly, "Well, of course I don't understand such things, but it seems to me to be a nice little picture." Miss Kite says, "I agree with Mr. Verdegris. I remember that in Boston they said that, in a pyramidal composition, the apex should always come above the center of the picture." Mr. Easton says, "Anyway, there is very poor rendering of the flesh textures. Now, with a little more metol in the developer—" And Mr. Williamson comments, "It would be a good picture if he would add this and eliminate that."

* * * *

And so the jury muddles through to the Fifth Annual Salon of the Pittsville Camera Club. There is no gainsaying the sincerity and honesty of intent of Miss Kite and the Messrs. Blossom, Spraddle, Easton, Williamson and Verdegris; but they are completely lacking in any unity of purpose or any common basis of judgment. Williamson is the only one who knows much about processes, Easton is the only one with any scientific background, and Verdegris is the only one who brings up the matter of composition. *Subject-matter* is the only possible common meeting ground, and here each is swayed by his own personal predilections.

The situation here outlined is not exaggerated or concocted. The author has, in his time, served on a considerable number of juries, and he has frequently seen just such people arrive at just such makeshift conclusions. Clearly, there is crying need for a more systematic and universally accepted procedure for judging pictures.

Such a procedure must, in the first place, avoid the common and juvenile preoccupation with subject matter. It must be postulated on universal pictorial values. It must, on the other hand, recognize and understand the qualities and limitations of the medium. It must, finally, be expressed in a small number of easily applied criteria.

I suggest the following four criteria as a basis for the procedure of judging pictures:

1. Technical rendering
2. Pictorial arrangement
3. Subject matter
4. Congruity

This list presents not only the criteria, but the order in which they should be applied. Subject matter is the third factor considered. To look immediately at subject matter, as is so often done, leads always to erroneous judgments; for subject matter always involves personal and instinctive likes and dislikes.

Therefore, in order to prevent subject matter from affecting the jury's judgment, pictures should be turned upside-down for their first examination by the jury. The pictures should remain in this position while matters pertaining to the first two criteria—technical rendering and pictorial arrangement—are discussed and settled.

There is nothing freakish in this proposed procedure of turning the



"The Epicure"

William Mortensen

pictures upside-down for judging. It is common practice in most art schools, and is decidedly worthy of emulation by juries of photographic salons.

Technical Rendering

The first point of judgment is the technical excellence of the print. If it is a straight print, does it make the best use of the facilities of photography? If it is a carbro, is it a good carbro—i.e., does it show an intelligent and competent handling of all details of the process? Any consideration of the *comparative* excellence of processes is out of place: a good straight print rates just as high as a good bromoil, *but no higher*.

In order to judge accurately of technical rendering, it is obviously necessary that the jury members be, all of them, well-informed on the principal processes. Without this knowledge, it is impossible to appreciate the special qualities of these procedures. The following processes are generally accepted as legitimate:

Gum-bichromate
Platinum
Carbon and carbro
Paper negative
Fresson
Bromoil and bromoil transfer

Textures

To reject a print because of ignorance of the process (as has been done) is sheer bigotry. On the other hand, the jury must understand and enforce the legitimate limitations of any accepted process. They must put their foot down firmly on any effort to "dope up" prints in a way that takes them out of the photographic category. This "photo-graphic quality", which is easily recognized even by the laymen, is the limiting factor in any process. If it is possible to ask, "Is it a photograph, or is it something else?" it is evident that the process has been abused.

Pictorial Arrangement

I have chosen the above phrase rather than the conventional term "composition", partly because it is less imposing, and partly because it more easily embraces the varied considerations involved. The latter term might seem to imply that a grandiose or involved composition is demanded of all salon prints. This, of course, is not the case: many good prints are modest and unassuming in their matter and method. But every good print shows good taste, sense and rationality in *arrangement*.

Pictorial arrangement is shown in the handling of numerous factors.

1. Selectivity. It must be clear that the picture is not the result of mere casual "pot shooting". Selectivity extends not only to the choice of subject matter and the presentation of a significant aspect of the latter, but to the emphasis or elimination of detail.
2. Geometric elements. Lines and shapes must be harmoniously related.
3. *Notan*. The pattern of lights and darks must be simple and well-considered.

4. Lighting. This must be simple and direct, and must conform to the other elements of the picture.

Subject Matter

The first two points are best judged with the picture upside-down. Now the jury turns the picture right-side-up and looks at the subject matter. Good subject matter will reveal three characteristics.

1. Carrying Power. The general purport of the picture should be clearly understandable at a distance of twelve feet. The first glance at the picture should reveal that there is something "going on" there.
2. Significance with simplicity. The combination of the two qualities is important. For example, a picture of a single moth ball would be simple, no doubt, but could scarcely be regarded as significant. On the other hand, a picture of a mob of ten thousand people might well be significant, but, unless subordinated to some dominating figure or idea, would lack simplicity.
3. Universality. In good subject matter there is something that appeals to all people. The great works of art that the past has given us all relate themselves, through their subject matter, with universal human fact, experience or emotion.

Congruity

After having carefully considered the factors of technical rendering, pictorial arrangement and subject matter, the jury arrives at the summing up. It is in this matter of congruity that the real worth of the artist shows itself. He may understand his process, he may have a flair for pictorial arrangement, he may have ability in the selection of subject matter, but unless he is able effectively to *combine* these talents, he still falls short in his accomplishment.

The technical rendering, for example, must conform to the subject matter. A straight print might give a very poor account of a subject cluttered with extraneous and irrelevant detail, detail which might easily be subordinated or eliminated in a bromoil or paper negative. On the other hand, it would show very bad taste to use one of the latter processes with a print which depended for its principal effect on the meticulous rendering of fine detail. There must be a similar conformity between subject matter and pictorial arrangement. Delicate material should not be presented in an arrangement of dominating planes and masses.

* * * *

Miss Kite and the gentleman of the jury act as wisely and as impartially as they are able. But they (and juries everywhere) are greatly handicapped by the lack of any well-reasoned and unified method of approach to their delicate task of judgment.

Not only are particular juries at odds with themselves in their manner of selection, but there is a notorious divergence in standards between various salons. Certain salons, in fact, are known to be dominated in their pictorial policy by the prejudices of individuals. Theoretically, there are possible advantages in a one-man jury; but, unhappily, shows that

are selected in this manner always reveal a strong *personal bias in subject matter*.

These facts, and the more or less well founded rumors that grow out of them, have given rise to many misunderstandings and acrimonious controversies that do great damage to the prestige of salons. Contributors have come to regard salons and juries with cynical doubt. They have even been so unkind as to intimate that juries make their selection by the process of throwing all prints out the window; those that fall face down are rejected, those that land face upward are hung, and those that stand on edge are given prizes.

To recover their dwindling prestige, and to fill the function in the photographic world to which they were originally dedicated, it is necessary that the salons agree on a uniform procedure for juries, and on a uniform, unified and simple code of judgment.

Snow As Pictorial Material

William S. Davis

A MISTY veil of whirling snow-flakes; a white blanket covering the bare earth; tree-branches turned to lace-like patterns; familiar objects taking on fantastic shapes as their burdens of snow accumulate. Such are a few of the aspects that meet the eye when the frosty hand of a northern winter descends upon the land.

Needless to say, the various transformations wrought by the presence of snow or ice produce effects that lend themselves well to pictorial treatment. And this applies not alone to pure landscape matter, but equally to architectural subjects, from farm-houses to "skyscrapers," and from these to snow-trimmed architectural details; to street-scenes in city and country; sea-coast, river and harborside views. Various winter sports naturally lend themselves as themes for figure and *genre* pictures. Moreover, opportunities in many instances are not limited to the hours of daylight, for some of the most effective studies of artificial lighting and moonlight have been made with snow upon the ground.

Very interesting atmospheric effects, displaying most subtle transitions of tone, may be captured by one bold enough to venture forth with



"Snowy Weather"

Wm. S. Davis



"Snow Lace"

Wm. S. Davis

photographic outfit during a thick snow-storm. The fogs and mist brought on by a rise in temperature during a winter thaw bring about visual changes that should not be overlooked. On sunny days there may be found intriguing patterns, formed by cast-shadows, which rival (and sometimes exceed) in pictorial importance the shapes of tangible objects associated with them.

In dealing with the compositional element in snow-scenes, an outstanding feature in general is the tonal changes encountered in important areas of the picture-space. An open foreground, for example, when covered with snow is usually the lightest area in the scene, being higher in key than a clear blue sky—quite the reverse of the relative tone-values found in the average type of landscape at other times. Even a white house, which would form a strong accent in a setting of summer foliage, will give place to the highlight accents in sunlit snow.

Then, too, single objects, generally more or less united by surrounding material of closely related tone, are very likely to stand out as sharply defined units when seen amid a snowy setting. This makes necessary especial attention to linear pattern in composition to attain harmonious effect.

In many cases there is noticeable a marked tendency for gradations of tone to separate into two general groups. One of these, being made up of such areas as sunlit snow, delicate shadows or a pale sky, will be



"In the Moonlight"

Wm. S. Davis

high in key, while the other group, which includes various dark objects or strongly shaded parts, goes to the opposite end of the tone-scale. To avoid harshness and secure pleasing variety in gradation, the photographer should make much of such intermediate tones as may be available as links in a naturally long scale.

In selecting material it is well to look first for an attractive object or closely related group of forms as a nucleus—then by choice of view-point try to get the surrounding parts into satisfactory relationship as regards balance of line, tone and space division, including only so much as is needful to support the principal feature.

Proper subdivision of the picture-space is extremely important. Duplication in size of the larger areas, such as expanses of snow and sky, makes for monotony. *Per contra*, variation in size and shape does much to render a composition interesting in structure.

Unless the subject-matter consists mainly of large tonal areas, it is advisable to choose a restricted amount of material to lessen the chance of getting a confusing image loaded with infinitesimal detail. This is not to say that small details, such as the snow tracery on bushes and tree-branches, should be avoided—indeed, material of this kind often presents the foundation for decoratively beautiful patterns, but in dealing with this type of subject-matter it is essential to judiciously limit the quantity

included by means of a near viewpoint to insure presentation on an effective scale. Inclusion of some relatively simple areas also accentuates the effectiveness of delicate details.

Though not infrequently lacking in snow photographs, harmonious tonal quality is as essential as good linear pattern. To attain such quality it is not only necessary to have an agreeably balanced placement of light and dark spaces but, in addition, an adequate rendition of the delicate degrees of gradation in the several parts to interpret the character of the material and the mood expressed by atmospheric conditions. Here is where analytical observation, rather than casual survey, of the subject is required. The thoughtful observer will note such points as the play of gradation in an undulatory mass of snow as the light strikes the surface obliquely, and the approximate relative strength of tone of cast-shadows, sky and dark objects, respectively. Those who have learned to see the countless variations in tone in both light and dark areas will no longer be satisfied with "soot and whitewash" renditions!

In open scenes the tone of the sky plays a notably important part in the general effect. To preserve the force of the light accents existing in the snow the sky should be rendered lower in tone than the sunlit portions of the snow, yet not so dark as to convey a heavy effect out of keeping with the relative tonal value of a clear sky.

On bright days, *contre jour* effects showing cast-shadows falling toward the observer are generally attractive, but these are best treated as foreground compositions, with the sky excluded as far as practicable, since the latter is usually too pale in tone near the sun to allow due accent being placed upon the sunlit portions of the snow. Inclusion of darker material to fill the upper part of the picture is often helpful, but as all upstanding objects present their shaded sides toward the lens when facing the light, a very full exposure is necessary to obtain good tonality in the darker parts.

Getting fine tonal quality is simply a matter of using intelligently the color-sensitive material and filters universally available. All forms of orthochromatic and panchromatic film suitable for general all 'round needs are suitable. The same applies to plates with similar emulsions, but it is preferable in the case of plates to use either double-coated or backed non-halation types, rather than the single coated, where a long scale of tones is present.

On bright days, when blue and violet tints are much in evidence throughout the lighter parts of a scene, employment of a suitable color-filter is a great aid in rendering the full scale of gradation present in subjects that include dark objects, the filter serving to hold in place, so to speak, the nuances of tone in the snow and the relative tone-value of a clear blue sky when the exposure is increased sufficiently to record gradations in the dark passages. What constitutes a suitable filter depends both upon the character of the emulsion and the degree of correction desired. With super-sensitive pan, emulsions the pale green "X1" filter is favored by many workers, though the light yellow "K1" is very



"Shadow Pattern"

Wm. S. Davis

generally useful. When a darker rendition of blue tones is desired the stronger "K2" will do the work. This is also suitable for use with the "chrome" type film or with orthochromatic plates. Experienced workers know that the color corrective effect of a given filter is greater when used with pan. than with ortho. emulsions, also, that the exposure factor is lower, because of the increased sensitivity of the film to the filter color. On open scenes when the sky is a very deep blue, as may happen at high altitudes, it is sometimes best to work without a filter to avoid getting the sky excessively dark in tone. And on grey days there is little or nothing gained in most cases by using any type of filter.

Whether one is working with or without a filter, one fact should be kept in mind, namely, that fine tonal quality in the darker parts can be obtained only by giving enough exposure to register gradations in the lower portion of the tone-scale. Dark objects near at hand, and those that appear dark by being seen against the light, necessitate giving more exposure than is needed when the range of contrast is lessened either by intervening atmosphere or the absence of dark material. Naturally,

however, the actual length of exposure needed to record detail in the darks is less than when the ground is bare of snow, owing to reflected light making the shadows more luminous. As a rough guide to relative timing, one can figure approximately one-half the normal exposure for snow-scenes with dark objects nearby, and one-fourth for very open scenes. But a reliable exposure-meter, properly used, is the best indicator.

Any standard developer is satisfactory, but where the subject exhibits a long range of contrast it is advisable to make the development time a little less than normal.

Use a lens-shade to exclude reflected light coming from portions of the scene outside the field of view. Similar protection is also a necessity when working during a snow-storm to prevent snow-flakes reaching the lens. Best of all in stormy weather is a box-like shield of some waterproof material that will protect the whole front of the camera.

A final suggestion is to watch out for condensation of moisture on the lens, which quickly turns to a frost film. Accidentally bringing the bare hand close to the lens when adjusting shutter or diaphragm is a possible cause of such condensation. Also bringing the outfit indoors and then taking it out again before the condensed moisture so formed has had time to evaporate. The latter treatment may even freeze the shutter mechanism or at least retard the action.

Notes upon the Illustrations.

Snow-lace. Multiplicity of detail renders such a scene as this difficult to compose well. Advantage was taken of the tree-trunks to secure a balanced placement of dark accents which bring into relief the heavily snow-laden boughs between, located at the focal-point of the picture. Made with a Kodak and anastigmat lens. Exposure 1 second at $f32$, with Kodak Color-Filter, on Autographic film, at 1.40 P.M. on a bright day in late winter.

Shadow Pattern. Wooded background used to concentrate attention upon the pattern of cast-shadows filling the foreground. While made facing the light, the sun's rays were cut off from the lens by an intervening tree-trunk. A No. 1 Kodak with anastigmat lens was employed, the exposure being 1 second at $f22$, with Kodak Color Filter, on Autographic film, at 2 P.M. on a bright day in February. The full exposure allowed has recorded a desirable amount of gradation in even the deep shadows.

Snowy Weather. Made during a thick snow-storm, using a $3\frac{1}{4} \times 4\frac{1}{4}$ plate camera fitted with Ilex anastigmat lens. Exposure $1/25$ second at $f6.3$ on a Double Coated Ortho plate, in late afternoon.

Over the Creek. An open type of scene, made up in the main of several nearly flat tone areas, accented by the dark lines of the foot-



"Over the Creek"

Wm. S. Davis

bridge and a few details in the distance. The compositional problem presented was to so utilize the large tone areas as to secure agreeable subdivision of the picture-space, and at the same time locate the accenting lines of the bridge most effectively. Made with a 4 x 5 View camera fitted with Ilex anastigmat lens, only the 10-inch back combination of the latter being used however. Exposure $1\frac{1}{2}$ second with lens wide open (effective value $f10$ for the back combination) on Double Coated Ortho plate at 2.45 P.M. on a cloudy bright day in late winter. A Royal Color Filter was employed, rated 8x on orthochromatic material.

In the Moonlight. A true moonlight, devoid of "faking." Made with a $3\frac{1}{4} \times 4\frac{1}{4}$ plate camera and Ilex anastigmat of 6-inch focal length. Exposure 30 minutes at $f6.3$ on a winter's night, using a Double Coated Orthochromatic plate.

All prints on P.M.C. Bromide, in some cases only a portion of the negative being utilized for enlargement.

Relay Enlarging

Haden Hankins

IN projection printing the pictorial photographer enjoys a degree of liberty of almost Utopian proportions. All the facilities now known, thanks to Mr. Mortensen, as projection control, enable him to alter almost every aspect of the enlarged print even to form or drawing, and so give unhampered play to his esthetic intention or desire.

Now and again, however, he runs up against a certain limitation; a limitation imposed by physical laws which is distressing and disturbing. A quite large print is desired from a very small negative, or from a very small portion of a negative. The easel is pushed as far as possible away from the camera; a positive element is slipped over the lens, or the lens is changed to one of shorter focal length; and after these things are done the image is still unsatisfactorily small. What to do, what to do? The unhappy worshipper at the shrine of Art is in a deplorable state. Then, just as he is considering knocking out a darkroom wall to get a few needed feet for projection, the solution of his difficulty presents itself and he proceeds, as the writer has done, to make his heroic enlargement by relay.

This is simply another application of the enlarged negative. As a control method the utility of these in pictorial work has been described many times, but the method may, with modifications, also be used to increase the degree of enlargement possible with any given enlarging set up.

The secret lies in enlarging twice. First, an enlarged positive is made upon some form of sensitized material having a transparent or translucent base and of such a size that it may be accommodated by the negative holder of the enlarger. This positive is placed in the enlarger and from it, also by enlargement, a negative is made. From this negative the final print is printed by contact. Since the degree of enlargement of the finished print compared to the original negative will be the product of the degrees of enlargement of the positive and the second negative



Fig. 1



Fig. 2

Actual Size

then the method may be used to increase enlargement up to the square of the maximum possible with the apparatus in use. For instance, the maximum enlargement possible with a popular type of auto-focus enlarger is $3\frac{1}{2}$ times. If the first positive and the final negative are both made with this degree of enlargement then $3\frac{1}{2}$ times for the positive by $3\frac{1}{2}$ times for the negative will give $12\frac{1}{4}$ times as the degree of enlargement of the finished print.

The actual practice of relay enlarging may be explained by a description of the procedure followed in making the illustrations for this article. When the original negative was made a three-quarters portrait was intended. As such, however, it failed due to the fact that several important items were overlooked because of concentration upon the lighting and pose of the head. For a time the negative was laid aside, but not discarded since it was felt that it possessed some pictorial possibilities. Subsequent examination seemed to indicate that the head and shoulders were the strongest points, but that for maximum effectiveness an 8 x 10 print would have to be made. The selected portion of the negative measured $\frac{4}{5} \times 1$ inches. To bring this up to 8 x 10 inches meant an enlargement of 10 times. The enlarger in use, however, being capable of only 6 times, it was manifestly impossible to make the desired print by direct enlargement. The relay method was resorted to as a solution of the difficulty.

Fig. 1 is a contact print of the original negative cut down to show the relative size of the selected portion.

A lantern slide plate was chosen as the material for the positive transparency. The size of these, $3\frac{1}{4} \times 4$ inches, was appropriate for the



Fig. 3

Actual Size 8"x10"

enlarger which accommodated $3\frac{1}{4} \times 4\frac{1}{4}$ negatives. Also, their manipulation being very similar to that of bromide paper, they are easily handled by anyone familiar with projection printing. From that portion of the negative selected for use a three times enlargement was made on the plate. In doing this a bit more of the negative was included in the positive than was intended to appear in the finished print. This was done in order to allow some slight adjustment to be made in the position of the image on the final negative. The original negative was somewhat more contrasty than necessary, and an effort was made to overcome this in making the positive by giving ample exposure and shortening development. The actual materials used were an Eastman Lantern Slide Plate, Regular, developed in D-72 diluted 1 to 4. Other plates and developers may, of course, be used with equal success.

Fig. 2 is a print to show the general appearance and relative size of the positive.

Making the final negative was the next step. Since the subject was a bold, vigorous type, the writer felt that the characteristic quality of the paper negative would be appropriate. And so, an extra thin bromide of normal contrast was chosen as the material to be used in this part of the process. The lantern slide positive was placed in the enlarger and from it, by enlarging about $3\frac{1}{3}$ times, an 8 x 10 negative was made on the bromide paper, (Fig. 3). Here the printing exposure was adjusted so that shadow detail was plainly visible when the negative print was viewed by reflected light. This technique may make the highlights appear blocked-up, but unless the positive is entirely too contrasty, high-light detail will be apparent when the negative is examined by trans-



Fig. 4. Actual size 8"x10"

mitted light. In this step the materials used were: Dassonville Charcoal Black, Grade F, developed in D-72 diluted 1 to 4.

It now only remained to make the final print. (Fig. 4). Since this was simply a matter of contact printing, no particular explanation is necessary other than to note that a paper was selected with a surface appropriate to the subject, and of a degree of contrast which would render the subject tones as desired.

Finally, the chief item to be observed in all of the foregoing is that although the completed print is a 10 times enlargement, the greatest degree of magnification used was just a little over $3\frac{1}{3}$ times.

It should not be assumed that the materials chosen and the procedure followed in this description are the only correct ones. Many variations will suggest themselves to the worker. It is, for instance, entirely possible to make the final negative from the positive transparency by contact, and from this contact negative to make the finished print by direct projection. This procedure is particularly applicable where prints 14 x 17 or larger are desired. In these sizes the expense of making enlarged negatives to produce prints by contact might easily be prohibitive. Again, if the enlarger in use is equipped with a negative holder which will not receive glass plates, then the positive may be made on film stock. Such positives could be used in enlargers for miniature negatives and so make the method useful to the minicam enthusiast.

It should be understood that the results secured by relay enlarging are not quite the same as those produced by direct enlarging. No matter what variation of the method is used a certain increase in grain should be expected. This, no doubt, results from overlapping of the grain of the materials used in the various steps, and while the effect may be minimized by the use of diffusion in the two projections, still it is a characteristic to be considered. If the effect of a direct enlargement is desired then relay enlarging is not the method to use. But it very often happens that grain is not detrimental. In such cases, if the size print desired cannot be secured directly, then the relay method will prove very satisfactory.

Neither should it be looked upon as a control process, although not a little is possible in this respect. In making the positive, adjustments may be made by dodging or shading, and the final negative is easily worked on. If this is on paper the technique of the usual paper negative process may be readily applied. In many cases such opportunity will be most useful. The primary virtue of relay enlarging, however, as has been stressed, is that it makes possible a great increase in enlargement where projection distance is limited.

Christmas Cards From Window Pane Silhouettes

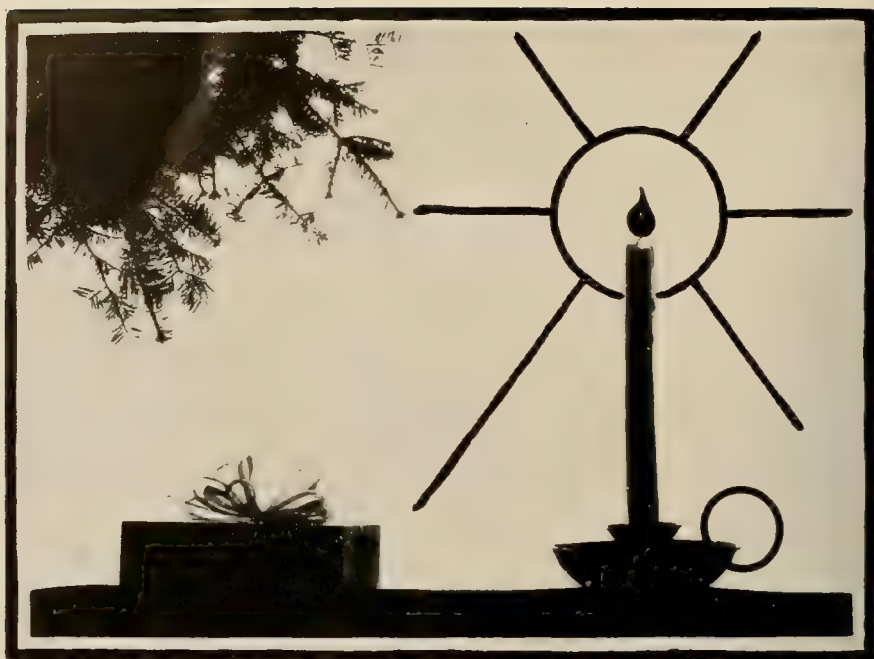
Priscilla M. Pennell

IF YOU are an ardent camera fan you will want to make your own Christmas greeting cards. The joy and satisfaction of sending a truly personal greeting will more than repay you for the time and effort spent in making it. Any one can make his own design by the window pane silhouette method and will have great fun doing it. You will need white tissue paper, mucilage, scissors, heavy black paper, a table and enough dull black material to cover it, some objects suggestive of Christmas, and above all—a little time, patience and ingenuity.

Before beginning on the actual set-up, make several rough sketches on paper, taking into consideration the size and shape of the window pane and also the proportions of the negative your camera produces. In planning the placing of the objects be careful to leave enough free space in the background for the word or words of greeting which should be as brief as possible. The simpler the design and lettering the more effective your card will be. If you are so fortunate as to have a really decorative window of leaded glass or small panes, the window itself can be the main part of your design, needing only a wreath or a candle or two to complete it.

The stockings were pinned to the window frame and the camera set ready to snap before the cat was brought in. A second person held its attention while the picture was taken. The original card was on 4 x 5 buff paper. The outside line was made with a red water color pencil and a ruler and then softened with a wet paint brush.





The evergreen is part of a wreath. The package is a black box tied with tinsel ribbon. The original was printed on a 4 x 5 buff card and the border line and candle flame and halo were made with gilt water color paint.

However, this article is written primarily for those whose windows will only provide the clear white background.

Choose a window with a large clear pane upon which the sun shines without throwing shadows. Pin the curtains back. The plain white background is achieved by sticking the white tissue paper to the glass, having first cut it to an exact fit, and using as little mucilage as possible. Avoid folds, wrinkles or overlapping as this may show in the print. For the window with small panes fasten a sheet over the *outside* and hold taut with thumb tacks. Except for a portrait silhouette you will need the table with its dull black cover placed close to the glass and a little higher than the sill. (Books or magazines under the legs can be used if it is too low.) An old black velvet coat has served me admirably as the table cover. Pull the shades and close the doors so that no light enters the room except through the tissue papered pane. The "stage" is now set for the "actors".

Many articles right at hand can be grouped to make artistic cards: wreaths, candles, wrapped gifts, bells, filled stockings, toys, and the family pets offer a few suggestions. Do not use more than three articles at a time and many times one or two will be enough. Experiment until you are satisfied with the arrangement. Cut letters three or four inches high out of the heavy black paper and arrange them to form the words of greeting to fill the free space on the white background. A drop or two of the mucilage will hold them securely to the tissue paper. The same lettering may be used for several different card designs.

If a portrait profile is to be used be sure that the subject is seated so



*A portrait silhouette such as might
be used for a Christmas card.*

that ample white space shows all around the head and shoulders. Dark clothes do much to help make the silhouette clear cut.

A camera with a ground glass focusing screen is essential for best results. However, with a little ingenuity a roll film camera can be made to serve. Before loading the camera, remove the back and stretch a piece of tissue paper in exact register in place of the film and fasten with a piece of scotch tape. Mount the camera on a tripod and focus on the tissue paper. Without disturbing the position of the camera remove the paper and load with film. Of course, once loaded, all exposures must be made from the same position, as the finder is not accurate enough for close work.

A little experimenting may be necessary to determine the correct exposure as it depends on the brightness of the sun, density of the background and the type of film used. Remember that a silhouette is produced by exposing for the background and not for the subject, so you won't need a time exposure.

Be sure your negatives are fully developed. If you do not do this yourself tell your photo finisher what you want from your film and have it given special attention. If you use a miniature camera have an enlarged negative made from the one which comes out best. Print on extra contrast double weight paper in buff or white. Your card should have a wide margin. Envelopes to fit a 4 x 5 card may be purchased from your photo finisher or supply house. If you like to put on a few finishing touches by hand a touch of red or gilt in the border or a candle flame is very attractive. Or you may prefer an embossed border, or both, but be careful not to spoil the simplicity of your design.

Once you have experienced the satisfaction of sending your friends a Christmas greeting that is truly your own, you will say that it truly is worth the effort.

Practical Miniature

Camera Photography

H. Crowell Pepper

Part IV: The Negative

PHOTOGRAPHY is a breeding ground for superstitions. Many of these result from "experiments" by untrained workers and the dissemination of "results" through the photographic press. A majority of these superstitions relate to the production of negatives and from my earliest days in photography until the present I have been secretly informed of many "private" developers for which claims are made that would shame the exploiter of some patent nostrum. Just why photographers are misled is difficult to understand except upon the theory they are too lazy to reason out things for themselves. In many instances a few moments thought would show the most inexperienced the fallacy of the claims made. Jumping from one developer to another will not lead to success and the sooner one learns this the sooner good negatives will be produced.

I believe it was Alfred Watkins who, after a series of experiments, reported that there was little variance in the results produced by various developing agents. At the time he conducted these experiments the problem of grain was not the bothersome one it is to-day. Emulsions were slow and the grain relatively fine and negative sizes much larger—enlargements seldom exceeded five diameters. Confusion may be avoided if my readers will note I speak here of developing agents and not developing formulae. There is a difference which many fail to realize or if realizing fail to heed. Not every developing formula is suited to every emulsion, if one were found giving equally good success with all emulsions there would be little need for emulsion makers to spend thousands of dollars in experimental work and maintain expensive laboratories. The advancement of the science of photography and the modern demands upon it have necessitated variations in photographic emulsions and these

require variations in the quantities of the different chemicals that make up a developer, to produce a balanced negative.

The term "perfect negative" is of such general use that I have attempted to discover its meaning through inquiry among many photographers. The result was confusing to say the least. There were as many definitions as there were persons defining the term. In order that there may be no misunderstanding between my readers and me, I am giving my definition. All negatives result from the action of reflected object light upon a light-sensitive photographic emulsion. When the various factors involved are so correlated that the emulsion gives a negative image of the object, in which the tone range of the object is properly reproduced, we secure a technically "perfect negative". I use the word "technically" advisedly, for even such a negative will not give perfect results upon every printing medium and may not in fact produce the results desired by the photographer. I have tried repeatedly to point out that photography is a series of compromises from beginning to end. The tone range of our subject may be such that, even though within our negative tone range, it is beyond the tone range of any printing medium. Our negative of such a subject might be technically perfect and still we could not secure a really good print. Would you term such a negative "perfect"? A good illustration may be found in a subject of a road through a pine woods with the sun shining brightly upon portions of the road and upon this road a child in a white dress. Between the white dress in sunlight and the deepest woods shadow the tone range would probably exceed 100 to 1. Assuming you hit the exposure exactly and your emulsion could record all the tones, your negative being properly developed the result should be a "perfect negative". But where would you find a printing paper capable of reproducing the tones of your negative? From the foregoing you will arrive at the conclusion that in my opinion a perfect negative is one which will produce in the finished print the truest tone rendering of the subject or object photographed. It may be thin, of medium density or dense provided the finished print is true or possesses verisimilitude.

The perfect negative can never be obtained without some knowledge of the factors involved in its production. The successful physician is one who can diagnose from symptoms the disease of the patient and apply the remedy. He cannot do this without a knowledge of diseases. This knowledge he obtains from study. So must the photographer, to be successful, study all factors which enter into the making of his negative. He must possess some knowledge of (a) Emulsions of various types and their characteristics, (b) Color and its monochromatic rendering, (c) Subject tone range, (d) Exposure, (e) Developing agents, developing formulæ and methods, (f) Aftertreatment of the negative. It is the purpose of this article to discuss in simple language these factors and present to the readers a logical approach to the making of good negatives.

Photographic Emulsions. The sensitive coating upon film (celluloid) and glass consists of crystals of silver bromide held in suspension in a colloid, generally gelatine. There are other chemicals added for definite purposes which for this discussion need not be considered. These silver bromide crystals range in size from those hardly discernable with a high-power microscope to about eight microns. A micron is 1/1000th of

a millimeter so that 8/1000ths of a millimeter is quite small. All of these grains are not equally sensitive to light but there are so many in a square inch of the emulsion as to make this fact negligible. Again these grains in the ordinary emulsion are not sensitive to light rays other than the ultra-violet and blue. Sensitivity to the other colors is obtained by treatment with dyes. The subject of emulsions is too complex and extensive to be covered in the allotted space. We may only touch upon certain characteristics. If therefore some of the statements herein seem to be inaccurate from the strictly scientific viewpoint I crave your indulgence and trust the end will justify the means.

We, for convenience, will divide our discussion among those characteristics of greatest importance to the average photographer, viz: Speed, Color Correction, Contrast, Development and Grain.

Present day emulsions are labeled Slow, Medium Fast, Fast and Super-speed. This is merely a designation of their response to light action. Until recently the variation in emulsion speeds was obtained in the course of manufacture by a process termed digesting. The emulsions were treated to heat and the longer the treatment, the faster the emulsion. Unfortunately an undesirable factor entered, the size of the grains increased and fast emulsions were far grainier than the slow. For some time emulsion makers felt they had reached the limit of speed and were in a quandary as to how to meet the demands for faster emulsions. Fortunately, they discovered that treatment with certain dyes added speed without increasing grain size. Today, we have super-speed films of relatively fine grain. Fortunately, for the photographer, the increase in speed was not secured through the material sacrifice of other characteristics necessary for the production of good negatives.

The variation in emulsion speed is of little use to the photographer unless he possesses some yardstick whereby he may make comparisons. There are several methods used to designate speed—those generally used being the H. & D. (Hurter and Driffield), the Scheiner, the Weston and the DIN. Upon each carton you will find the speed rating of the particular emulsion in one of the above designations. Exposure tables and meters are calculated upon them. There is little space to devote to a discussion of the relative merits of each system. They are based upon different theories and factors which make it impossible to translate a DIN rating into a Weston or other, though tables are sometimes given which are fairly accurate. We are indeed fortunate that these ratings are sufficiently correct for practical purposes when films of the same manufacturer are compared, but we must not attempt to compare speeds of emulsions by different manufacturers even though both show the same rating under the same system. One manufacturer realizing the variations in the factors and methods used by different manufacturers in determining speed rating of film has refused to do more than give a table of comparative speeds of emulsions of his own manufacture. This is, at least, a safe position to take, though of little help generally. As I remarked above, the speed ratings are comparatively correct and any difference is compensated for by the Latitude of the Emulsion.

One of the most amusing things I have heard was the talk by a representative of a film manufacturer upon Latitude of Emulsions. With

a blackboard and a piece of chalk he explained latitude as follows. First he drew a line about eight inches long and said: "Let us assume that is the latitude of our 'A' film. You see that film has little latitude. We were not satisfied so we produced our 'B' film with a latitude of this." (Drawing a line fifteen inches long.) Two more lines each of greater length were drawn to show the increase of Latitude in two other films and the climax was reached when, with a flourish, he drew a line and continued it beyond the board saying: "This is the latitude of our new 'X' film." Needless to say his audience of at least two hundred amateur and professional photographers were more mystified than before. We hear so much of the latitude of film, and many with whom I come into contact seem to have so little conception of its meaning, that I shall try to express my understanding of the term. An emulsion is capable of registering a definite number of distinct tones, i. e., if one unit of light will register a faintly discernible deposit of silver a certain number of similar units will register between the faintest deposit of silver and the greatest deposit of which the emulsion is capable. This range in a good emulsion is about 1 to 512. In other words, if one unit gives the faintest deposit of silver, 512 similar units may be used before no further tones are recognizable.

Such an emulsion has a long tone range. In actual practice the Weston Photo-electric Meter uses a range of 1 to 128. Few subjects possess a tone range greater than 1 to 40. If our normal (?) exposure were 1/5th of a second at f:8 we could still secure a good negative if we exposed at 1/10th or 1/2 of a second since our emulsion range is three times that of our subject range. The film has what is generally termed considerable latitude. Latitude, as I understand it, is variable. Take the illustration I previously used of the little girl in the white dress in the pine woods. Our subject tone range in that case would probably be 1 to 100. To properly render all the tones our exposure would have to be quite accurate and if the meter showed 1/5th sec. at f:8 there would be no leeway and the same emulsion would seem to possess less latitude. The truth of this is established by the fact that, develop as we may, we cannot secure a deposit of more silver than is affected by the light action upon the emulsion.

In concluding the discussion of emulsion speed I should point out that the faster emulsions are said to be less rich in silver. I believe this statement is incorrect in that it is too broad. There is probably as much silver in the emulsion but the larger grains are more light-sensitive than the small grains and there are more large grains in the fast emulsions than in the slower. Consequently our exposure being so greatly reduced the smaller grains are less affected and do not reduce in development and are wasted in so far as image formation is concerned. From similar reasoning we can see why the resulting negative image is more grainy than in slower emulsions.

Color Correction. Since in a following section we shall consider more in detail the monochromatic rendering of color, our discussion of color correction need be but brief. Ordinary emulsions are only sensitive to blue and ultra-violet light and in my earlier days in photography orthochromatic and panchromatic emulsions were unknown. The use of non-color-corrected emulsions led to a false impression of the object photo-

graphed and indubitably prevented photography from advancing to take its proper place among the graphic arts. The blue of the sky was rendered as white paper, while the green grass and the red roof of the barn were generally a dark gray or black. Clouds were conspicuous by their absence. Any impression made upon the emulsion by colored objects resulted from the reflected blue light of the colored object. Photography could not progress unless the various colors of the subject could be rendered in their proper tone relationship in the print. The first step towards this result was the production of the Isochromatic or Orthochromatic emulsion which is sensitive to green and yellow-green. The next step forward was the introduction of the Panchromatic emulsions which were sensitive to all colors. Unfortunately, even these color-corrected emulsions were still too sensitive to ultra-violet and blue and something was needed to filter out these two colors or at least reduce their action so that the result would approach the color-sensitive reaction of the eye. This was accomplished by means of scientifically constructed color filters. Today, with the proper selection of emulsion and filter, we may reproduce in monochrome with fair accuracy the various colors. We may, by use of certain filters, secure unusual effects by contrasting the colors of our object photographed. These color corrected emulsions may be had in various speeds, making possible the taking of pictures indoors at night, as well as outdoors in the brightest sunlight.

Another characteristic of emulsions is the contrast factor. Too little attention is paid to this by photographers. There are some emulsions which give excessive contrasts. They are of value in special lines of work, but of little value in general photographic work. They are generally found in the slower emulsions and in some of the super-speed, particularly the superspeed panchromatics. Fortunately, most high-speed films are soft-working. I recently experienced much difficulty with a rather slow panchromatic film sent me for testing. The most carefully meter-tested exposures and weakened developers resulted in washed-out shadows and blocked highlights. This film has been changed and the speed slightly increased and the contrast greatly modified. There is another group of films, both orthochromatic and panchromatic, which I never use because of their great contrast. Little attention has been paid to this characteristic in this country. In Germany much experimental work is being done to counteract this contrast during development.

The faster films develop more slowly, as a rule, than the slower. The rough estimate is that the superspeed emulsions require about 40% more time than the slower. Here again is a characteristic that is brushed aside by American photographers. Burroughs-Wellcome in their book give a list of the various emulsions (films) and state whether they develop slowly, normally or fast. The student is advised to examine into this subject.

(To be continued)

Cinema Section

Edited by

William A. Palmer

Using The Optical Printer

THE combination of a projector and a camera forming an optical printer (described in last month's issue) makes possible many tricks and effects which can be added to a film after the camera work has long since ended. For example, the movie worker who has just now got down to editing and titling his summer and fall pictures cannot go back and photograph a few more scenes in which to place fades or other transitional effects by camera manipulation.

The addition of transitions such as fades, lap dissolves, or wipes are the special ability of the optical printer. Certain of these effects can be done in other ways as in the use of dye to fade the end or beginning of a scene or the use of black "scotch" cellulose tape for pseudo-wipes. But lap dissolves and double exposures combining two scenes already processed by reversal is a printing and duplicating operation. These effects can be produced by printing in an ordinary contact printer except that the duplicate so made must be spliced into the original film with emulsion reversed. In the optical printer, the emulsion of the duplicate can be made to agree with the emulsion of the original from which the duplicate was made.

Reviewing the construction of the optical printer, there are two film moving mechanisms (fig. 1). On the left is the mechanism of a projector which moves the film upward in the direction of the arrows while on the right the camera moves the film downward or in the opposite direction. The two mechanisms are geared together so that they keep in exact step, each holding their respective films stationary at the same instant. The lens between the two mechanisms transfers the image from the processed film in the projector side to the unexposed or raw film on the camera side. The operation is a projection and simultaneous re-photographing of the processed film with the image directly transferred from one film to the other. In the projector mechanism there is run, beside the processed film to be duplicated, another film known as a matte or more properly traveling matte. It is this matte that produces the elaborate wipes seen on the theatrical screen.

Figure 2 represents two pairs of traveling mattes. These are simply strips of positive film that have been prepared so that they are clear at one end changing by one of several ways to opaqueness at the other. They are made in pairs, one being the complement of the other. They are prepared in the

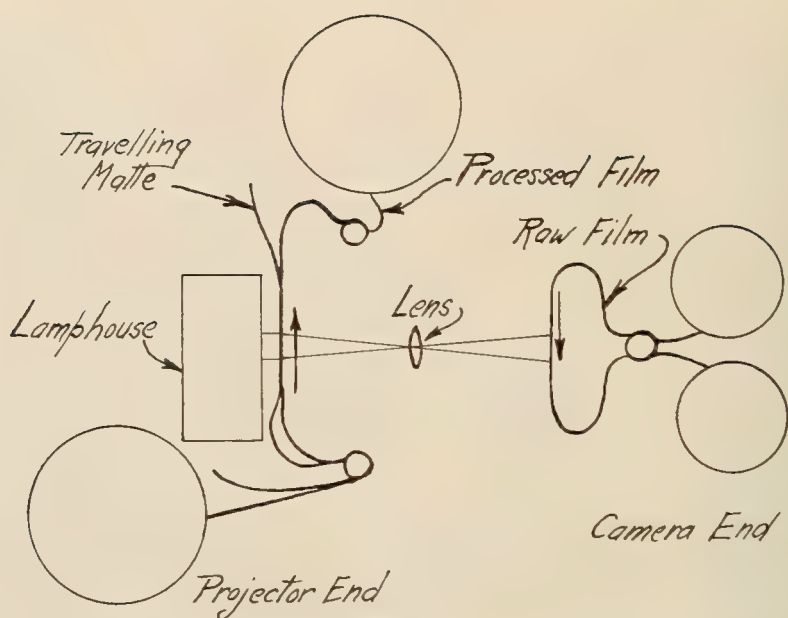


Fig. 1

following manner: A camera is set up to photograph a panel of opal glass which is illuminated from behind by a photoflood bulb. As the camera is operated, an opaque card is moved across the face of the glass to block out the light from the illuminated panel. The manner in which the card is moved across the glass determines the type of wipe. The card may have a straight edge to make the common type of wipe shown in the accompanying drawing or it may be serrated, curved, or fashioned in any shape the cine worker's imagination can conjure. The simple development of a film strip photographed as above gives the matte B. The complementary matte A is made by printing the first film in an ordinary contact printer. This must be a contact print so that the two mattes will register.

Matte films are made by other means than those described, particularly those for very complicated wipes when they look like a drunken spiral or an exploding star. To do this the illuminated panel can be photographed by stop motion, a frame at a time, while the glass is covered little by little by applications of opaque (the type used in blocking out backgrounds in still photographs) put on with a paint brush. For example, the camera is run for a few frames with the illuminated glass clear and then a small round dot of opaque is painted in the center and another frame exposed. The spot is then enlarged slightly and another frame exposed and so on until the entire glass is covered. With this animation method the wipe can take any conceivable form.

After the matte films have been prepared, the wipes are made in the following manner: The first of the two films to be connected by a wipe is threaded in the optical printer with the emulsion side facing the lamphouse and the raw film, ordinary reversal panchromatic, is loaded in the camera side with emulsion facing the lens. The scene is printed and the printer stopped when the scene has still a foot or so to run (enough length for the wipe) and

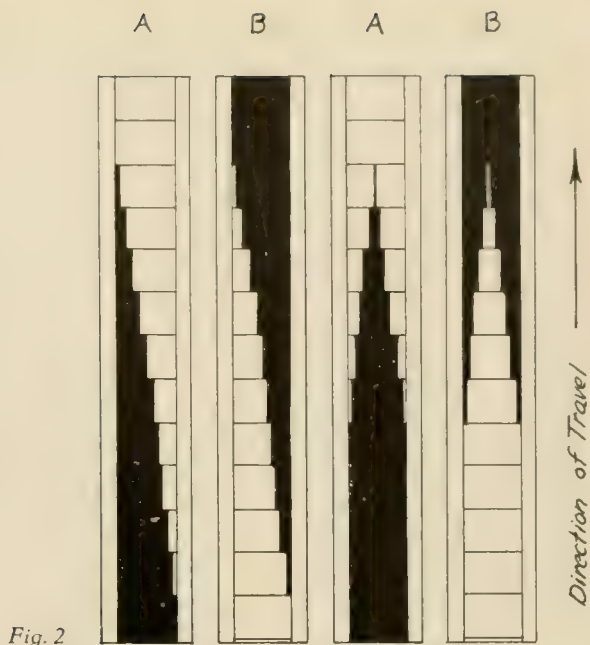


Fig. 2

the first matte film A threaded in contact with the scene being duplicated. (It will be remembered from the description of the optical printer last month that it is made so that it can be stopped instantly with the shutter closed and started again without loss or over exposure of a single frame. The matte is threaded so that the last clear frame before the wipe starts is in the aperture. The printer is then started and run until the matte has wiped off the first scene. Then it is stopped again and with the printing light turned off it is turned back by hand to the start of the wipe-off (the first clear frame before the wipe starts, where the printer was stopped before). Both the matte and the first scene are then taken out of the projector end of the printer and the second scene with the complementary matte B threaded in their place. In this case the B matte is threaded so that the last completely opaque frame, before the wipe-on starts, is at the aperture. The printer is then started again and the second scene printed, the B matte wiping the scene on. The matte is allowed to run out and the printer is operated until the second scene is printed completely. A whole series of scenes can be wiped one into the next if desired.

Lap dissolves are simpler to make than the wipes, for it is not necessary to use traveling mattes. A rheostat in the printing lamp circuit can dim the lamp to make the fade-out on one scene, the printer can then be turned back to the start of the fade-out, another scene threaded into the projector end, and the fade-in made by manipulating the rheostat again. All that is necessary for a smooth job is that the timing of the fades be done carefully. This is easy when the printer operates at the slow speed of four frames per second, one quarter normal projecting speed. The simple fade-out or fade-in, of course, is made in the same manner as the dissolve, except that the printer is not backed up to make an overlap.

Besides putting in transition effects, the optical printer has several other

very valuable uses. It is particularly good for making titles with moving backgrounds that are so popular these days on the theatrical screen. The title film is prepared with white letters against a plain black background and the background scene, over which the title is to appear, is selected. These two films are then printed successively onto the same length of raw film in the camera end.

Another use of the optical printer is in the duplication by reversal of films which have a sound track recorded for them. If reversal original 16mm films are duplicated by the ordinary method of contact printing when sound is combined with them, the result is a duplicate which must be run in the projector with the emulsion facing the lamphouse. This is opposed to the standard established by the Society of Motion Picture Engineers and causes the sound track to be out of the focus of its optical system by the thickness of the film. Not only will this cause poor sound quality but if such a film is run on some makes of sound projectors it will become seriously scratched on the sound track area in just one or two showings. The optical printer permits the duplicate to be made with the emulsion on the same side of the film as the reversal original.

Christmas Continuity

CHRISTMAS of all times is the best for making the ideal family record picture and this year more than any previous one the cine worker has ideal tools at his hand. The introduction this year of the type A Kodachrome film for picture taking in photoflood light has made possible the filming of color indoors with no more light than is required for regular panchromatic film. What more natural subjects for color could be found than those of Christmas day? Children, toys, the Christmas tree and its decorations, the turkey dinner—a color film of the event just can't miss.

Although a Christmas film can't help but be good it can be made even better by a little advance planning of the continuity. The planning should not be done in too great detail nor should the photographer make too great a fuss over taking scenes on Christmas day, lest he spoil the day for himself and others. The filming should be extemporaneous as contrasted to impromptu. If a plan is worked over mentally before the big day, there is always a guide handy which may be used for lack of other inspiration or may be discarded completely should more interesting opportunities for scenes present themselves.

Christmas is for children and it is therefore logical that a Christmas film

should be taken from the standpoint of a child. The subject matter, camera angles, and continuity can be designed to portray what the child sees and thinks. The film can start with the ceremony of hanging up the stockings before the fireplace. This can be elaborated with a comedy touch of young Billy, who comes in with Aunt Susie's borrowed stocking, preferred by him because of its very great capacity. Following can be a scene of a child asleep in which you double exposure fiends can show your stuff. Double exposed over the slumberer can be a succession of scenes showing the dreams that fill little heads the night before Christmas. The fantasy can be carried on further to show Santa Claus preparing the tree and toys, always shown from the viewpoint of a child, which means low camera positions and close-up scenes. An ambitious photographer can insert here a little sequence in which some of the toys are brought to life (through the magic of single frame or stop motion photography). Next morning the squeals and whoops of enthusiasm are recorded as the family gathers around the tree for the package opening marathon. Adults are only shown when they come to the attention of the child and then the camera shows hands or feet in close-up. The feverish ripping open of packages at the hands of the child are contrasted with the careful untying of knots and saving of ribbon as Aunt Susie unties her box of bath salts. It is always proper to use the old gag of the child looking on in envious anticipation as Dad plays with the new electric train or animated toy.

The Christmas dinner should not be slighted, and here again the story can best be told in close-ups featuring the child and eager gulplings as the dinner starts, followed by decreasing tempo as the appetite is chased away by the second helping of turkey stuffing until the end of dinner is shown with the rather listless pushing in of plum pudding intercut with a shot of the turkey carcass. The natural ending of the picture is a scene of the child, asleep again, hugging a couple of new toys.

The technical equipment for making a Christmas color film is quite simple. For 16mm filmers with type A Kodachrome film, four photoflood lamps are adequate. The exposure settings can be determined either by following the suggestions and chart included with the film or by the use of a photo-electric exposure meter. When using the chart, be very careful to measure the distance from the lamps to the subject as this is very important. The distance of the camera from the subject is immaterial. When using the photo-electric exposure meters, be sure and hold the meter close to the subject, preferably about a foot away. If one has calibrated his meter to find the proper film speed of type A Kodachrome in photoflood light with respect to a neutral grey "target" card as suggested in last month's Cinema Section, he will find exposure determination very easy. With regular 16mm Kodachrome film or 8mm Kodachrome film, more than four photofloods will be needed or the lamps will have to be used closer to the subject. Both these films when used with photoflood light must have a filter for photoflood over the lens.

The lights should be arranged around the subject to give as even a distribution of light as possible with no pronounced shadows when color filming. This is just the opposite from the ordinary black and white lighting technique where an interesting display of light and shadow is desired.



"January"

Lionel Heymann

Advanced Medal Print

■ We think that too many photographers are too willing to accept their subject matter as they find it. Many study their subject carefully in order to select the best point of view etc., but fail to let their imaginations play with the material. They have not trained themselves to see the possibilities of any given subject under a different light, a different atmosphere, or a different season. Suppose, for example, that you had come upon this subject about mid-day in the summer time. Obviously the material would be worthless under such conditions. Would you have realized at that time that a low angle of light would greatly improve the picture possibilities? Possibly. But could you have gone a step further and realized that such touches of snow as appear here would really be the making of the picture? Not only that but would you be sufficiently acquainted with your environment to know that such a condition would appear at the right time of year? These last two questions may seem a bit far fetched to many. It is nevertheless true that a fully developed artist would surely have the imagination to visualize this subject under ideal conditions, and even that he would have the knowledge to know whether or not those conditions would occur. The point of all this is that we should cultivate the habit of studying our material not only as it is but also, by resort to imagination, as it might be under ideal conditions. It is only by such study that we can hope to make the most of each picture possibility. It is unfortunate that the focus falls off badly in the lower right. This subject requires perfect all-over focus and it looks as if this could have been attained with proper focusing and a small stop.

Data: $2\frac{1}{4} \times 3\frac{3}{4}$ " Voigtlander Avus; Skopar F:4.5; $1/25$ sec. at F:5.6, on E. K. S. S. Pan., in DK-76; 2 P. M. on bright day in January; Defender Velour Black I; print size 8×10 ". 8×10 " prints on 14×18 " mounts may be obtained at the price of \$10.00 upon application to Camera Craft.

Second Award

Advanced Class

■ Mr. Hlodnicki has discovered really fine pictorial material for this picture and he has handled it quite expertly except for slight technical deficiencies. It seems to us that this subject should be rendered as sharply as possible so the texture and detail of the straw would be clearly shown. Unfortunately it looks as if some camera movement must have occurred since there is no point in the picture which is truly sharp. This is admittedly a long scale subject and consequently it is difficult to avoid blocking up of the highlights. However if the exposure is carefully adjusted to record detail in the shadows, and development restricted it is possible to obtain more detail in the highlights than is shown here. A soft working (long scale) negative material should be selected, of course. If possible this subject should be photographed again for the picture would easily have attained first place had it been technically better.

Data: Vollenda; 1 sec. at F:4.5; developed in DK-76, negative material not given; E. K. Vitava L-3, in D-72.



Thad Hlodnicki



'Pottery'

Christine B. Fletcher

the emotional quality. If we desire a quiet soothing effect such as is found in the present print, sharp contrasts of tone must be avoided, and vice versa. From this it is evident that we must select the objects to be used in a still life with due regard to their tonal value as well as their size and shape. To visualize this point imagine this picture with any one of the objects shown either very light or very dark in tone. Obviously the tonal harmony would be completely destroyed. Equally important is the tonal relation of the supporting plane of the foreground and the plane of the background, to each other, and to the pictured objects as well. Imagine, for example, the horrible results that would have been obtained had this picture been made against a white background.

No data.

Third Award

Advanced Class

■ The opportunity of showing another of Mrs. Fletcher's charming still life studies is most welcome. Those who have followed Mrs. Fletcher's work in this and other magazines will have observed her fine feeling for delicate tonal relationships. Much of the still life which passes through these competitions is notably deficient in this respect so we recommend a study of good still life with this idea in mind. The relation of one tone to another has much to do with establishing the dominant object in a picture and also controls to a considerable extent



"Alpinists"

Rex L. Wakefield

just ahead. This could have been corrected by taking a camera position a little more to the right, and such a position would have had the further advantage of causing the shadows to run slightly toward the camera rather than exactly horizontal as is the case at present.

Data: Rolleicord; Zeiss Triotar F:3.8; 1/50th sec., at F:16, on Agfa Superpan, in D-76; Bright sun, K-2 filter; Agfa Brovira Royal, in M. Q.; print size 11x14". 11x14" prints on 14x18" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Fifth Award

Advanced Class

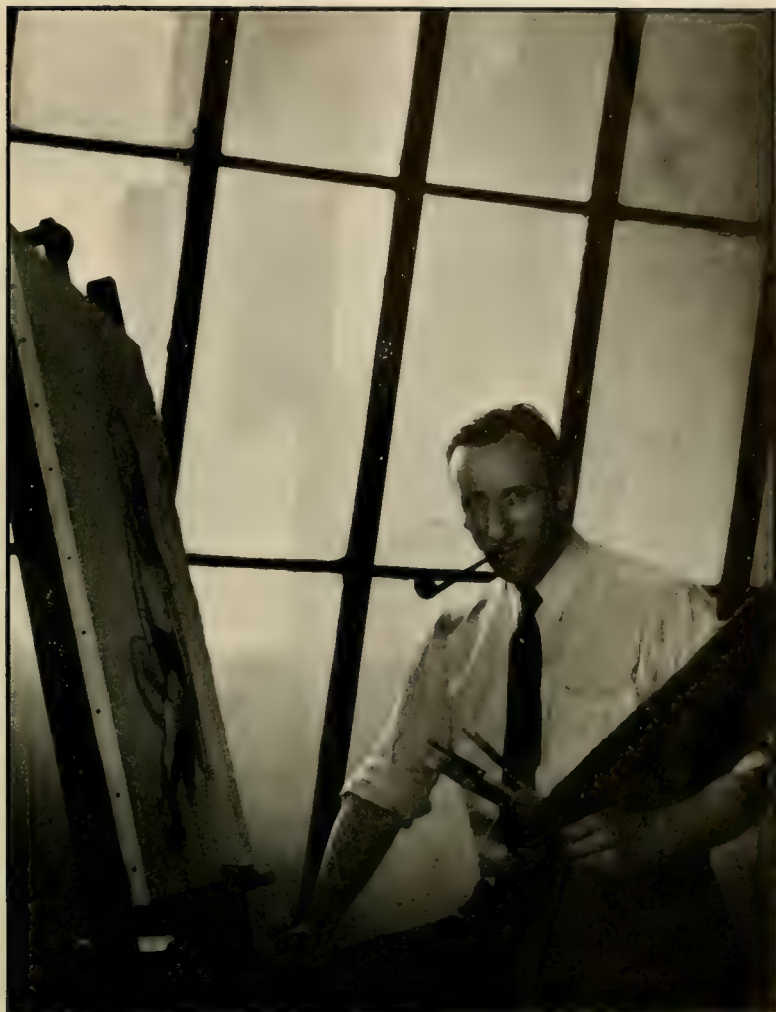
■ It seems to us that this picture comes very close to being a mighty fine thing, but just fails of complete realization because of a few minor deficiencies. The background appears to be highlighted at the wrong place since the present lighting tends to draw our attention away from the head toward an uninteresting part of the picture space. The apparent disparity in size between the left and right arms is too noticeable. This is due of course, to the camera being too close to the subject to obtain fully correct drawing with the focal length and film size used. Further, this discrepancy in drawing appears to be emphasized by the fact that the right arm is the only part of the figure that is not in sharp focus. It would have been better to focus so that definition would have fallen off in the lower left, if anywhere.

Data: 5x7" Studio camera; 12" Tessar; 1/5th sec. at F:9; panchromatic film; print on Illustrators. Special. Print size 11x14".



"Ella"

Don Wallace



"Augustus Dunbier"

Eldredge Looney

Amateur Medal Print

■ This we consider an excellent piece of work. Nicely placed, well lighted, and splendidly photographed. The question will probably arise in the minds of some readers as to whether or not this should be considered as an unduly obtrusive background. We can learn from this picture that a background can be strong in its own right without being detrimental. A strong background is permissible provided it is appropriate to the subject matter of the picture and provided it can be so arranged that it becomes an integral part of the composition. In such case the background adds to, or supplements the principal object. We have noticed a steady and very marked improvement in Mr. Looney's work over the past year, and he is hereby notified of his promotion to the advanced class.

No data.

Second Award

Amateur Class



"Unfortunate" J. Owen Campbell

be good, even though the subject matter is not attractive.

Data: 4x5" Speed Graphic; 1/10th sec. at F:8, with two photofloods; S. S. Ortho Portrait film in D-76; E. K. P.M.C. #11 in D-72; print size 11x14". 11x14" prints unmounted may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

Third Award

Amateur Class

■ We don't know, of course, but would guess that this picture is an action shot. That is to say that actual plowing was taking place at the time the picture was taken. However, the plowman does not appear to be exerting any particular pressure upon the plow, which is simply one way of saying that the action is not strongly shown. From this we should learn that the fact that the action was taking place at the time a picture was made is no guarantee that that action will be clearly and forcefully shown in the photograph. In all activity there is a particular moment which will disclose the action at its best for pictorial purposes, and it is up to the photographer to discover and capture that moment. In plowing, for example, the plowman applies weight to the handles of his plow to keep it from going too deep into the earth, and then as it begins to take too shallow a furrow relieves that pressure, and the process is repeated. Now it is obvious that this action will best be shown at the instant maximum pressure is applied. This will show up in the photograph, for at that time the body will be leaning forward over the plow handles, and it will be clearly evident that the weight of the body is on the hands. The space behind the plowman



"The Good Earth"

Robert Desme

(Continued on Page 606)

Fourth Award

Amateur Class

■ Mr. Navara has taken this picture under just the right light to make the most of it as a composition. We imagine that some might have been tempted to trim down from the top and in from the left until only the shadowed part of the upright at the left remained. To do so would be a mistake, however, since observe that with such a trimming the imagination gives added weight to the upright (its true dimensions not being evident) with the result that the composition is thrown out of balance. Mr. Navara has chosen to place his figure so that its movement is in opposition to the movement of the rest of the picture, which is in from the left and up the stairway. Consequently it serves to check the movement and bring it to a stop at the figure, with the result that the figure is given added strength. This is not incorrect, it is simply one way of handling the material. Another would be to place the figure so that it would supplement the movement of the composition as it exists without a figure. In such case the figure would appear moving up the stairway at a point about one third distant from the bottom. The figure would then be considerably reduced in importance and the attention directed more strongly to the picture as a composition in line and mass:



"Promenade's End"

Frank Navara

Data: Leica Model F; Elmar F:3.5; 1/100th sec. at F:6.3, on E. K. Panatomic, in Champlin #7; Leitz Pan-Green filter; Agfa Brovira Royal in D-72; print size 11x14". 11x14" prints on 16x20" mounts may be obtained at the price of \$5.00 upon application to Camera Craft.

Fifth Award

Amateur Class



"Huntin' Crabs"

Glen Fishback

it. It seems to us that Mr. Fishback has gone far in developing such a knack for it is clear that he saw the essentials of this arrangement before tripping the shutter. The picture could have been improved however had he moved his camera just a little to

■ Here is a picture which certainly shows the effectiveness of the candid camera technique, when it is used on appropriate subject matter. The impossibility of obtaining such fine naturalness had the children been aware of the camera is only too evident. It shows also that the candid cameraman who wishes to turn out really fine work must train himself to recognize a composition on the instant. Above all he must be able to judge in a flash whether or not he has the best available point of view, and if not should he move to the right or left, up or down to improve

(Continued on Page 606)

Monthly Competition

Scoring for Club Trophy Cups

The following won points for their clubs in the Advanced Class: Lionel Heymann and Thad Hlodnicki, for the Fort Dearborn Camera Club; Rex L. Wakefield, for the Los Angeles Camera Club; and Christine B. Fletcher, for the Photographic Society of San Francisco. No points are allowed for Mr. Don Wallace's award since he now has a total of 15, the maximum permitted.

The following won points for their clubs in the Amateur Class: J. Owen Campbell, for the Norfolk Photographic Club; Eldredge Looney, for the Omaha Camera Club; and Frank Navara, for the Pictorial Photographers of America. Only three points are allowed for Mr. Eldredge's award since that brings his total to 15, the maximum permitted.

The following prize winners have no club affiliations: Robert Desme and Glen Fishback.

Standing of Clubs

Large Clubs Advanced Class

Fort Dearborn Camera Club.....	53
Los Angeles Camera Club.....	16
Pictorial Photographers of America.....	12
Photographic Society of San Francisco	10
Montreal Camera Club.....	3

Small Clubs Advanced Class

The Pack Rats.....	41
Camera Art Circle.....	5
Whittier Camera Club.....	3
Washington Pictorialists	2
East Bay Camera Club.....	1

Large Clubs Amateur Class

Golden Gate Miniature Camera Club....	27
Photographic Society of San Francisco	19
Pictorial Photographers of America.....	15
Miniature Camera Club of Oakland.....	11
California Camera Club.....	7
Camera Club of Ottawa.....	3
Miniature Camera Club of Detroit.....	3
Miniature Camera Club of New York....	2
Brooklyn Edison Camera Club.....	1

Small Clubs Amateur Class

Omaha Camera Club.....	15
Norfolk Photographic Club.....	13
Washington Pictorialists	8
Riverside Camera Club.....	7
San Jose Camera Club.....	7
Redlands Photo Pictorialists.....	4
Camera Club of Long Beach.....	3
Calgary "Y" Camera Club.....	2

(Continued from Page 604)

and in front of the oxen is too even and should be varied by trimming away at least one half of the distance from the left edge of the print to the plowman.

Data: Zeiss Ideal B; 1/50th sec. at F:8, on E. K. Panatomic cut film, in M. Q.; Tuma-Gas in M. Q.; print size 11x14". 11x14" prints unmounted may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

(Continued from Page 605)

the right, for that would have resulted in placing the upright figure a bit to the right in the picture space, greatly improving the composition. As things are the standing figure is too centrally placed.

Data: Leica Model E; 50 mm. Elmar F:3.5; 1/100th sec. at F:4.5, on E. K. Panatomic in Eastman Ultra Fine Grain; print on Defender Velour Black; print size 8x9". 8x9" prints on 16x20" mounts may be obtained at the price of \$5.00 upon application to Camera Craft. Prints will be exchanged with other prize winners in these competitions only.

The Winners

Large Clubs—Advanced Class

Fort Dearborn Camera Club
Chicago, Ill.

Small Clubs—Advanced Class

The Pack Rats
Pasadena, Calif.

Large Clubs—Amateur Class

Golden Gate Miniature Camera Club
San Francisco, Calif.

Small Clubs—Amateur Class

Omaha Camera Club
Omaha, Neb.



The End—The Beginning

For the third time we reach the annual conclusion of the scoring for the Club Trophy Cups. It is pleasant to be able to say as we did last year, that once again the figures show that club participation in these competitions has greatly increased over 1935. This year a total of 83 clubs competed as compared with 60 last year and 37 the year before. In 1937 we expect prints from an even larger number of clubs. Remember scoring starts with the January competitions the closing date for which is Dec. 4, 1936.

Contributing Clubs for the Year

Aluminum Camera Club (New Kensington, Pa.)
Amateur Camera Club of Buffalo
Amherst Camera Club (Mass.)
Appleton Camera Club (Wisc.)
Arizona Pictorialists (Prescott, Ariz.)
Austin Camera Club (Texas)
Bellingham Camera Club (Wash.)
Boise Camera Club (Idaho)
*Boulder Lens Club (Colo.)
Brooklyn Edison Camera Club (N. Y.)
Buffalo Camera Club

Calgary "Y" Camera Club (Canada)
California Camera Club (San Francisco)
Camera Art Circle (Bombay, India)
Camera Club of Hawaii (Honolulu)
*Camera Club of Long Beach (Calif.)
*Camera Club of Ottawa (Canada)
*Camera Club of Richmond (Va.)
*Camera Club of Sacramento (Calif.)
*Camera Pictorialists of Bombay (India)
Concord Camera Club (N. H.)
East Bay Camera Club (Oakland, Calif.)

- Ellensburg Photographic Club (Wash.)
 El Paso Camera Club (Texas)
 Erie Camera Club (Pa.)
 Everett Camera Club (Wash.)
 Fort Dearborn Camera Club
 Golden Gate Miniature Camera Club (San Francisco)
 Green Briar Camera Club (Chicago)
 Hamilton Camera Club (Canada)
 Hampton Road Photographic Society (Va.)
 Hartford County Camera Club (Conn.)
 Hockaday Camera Club (Dallas, Texas)
 Houston Camera Club (Texas)
 Jamaica Camera Club (N. Y.)
 Japanese Camera Club (San Francisco)
 Kamera Kranks Klub (Durham, Calif.)
 Kodak Pictorialists (Rhinelander, Wisc.)
 Kodak Club of Rochester (N. Y.)
 Little Rock Camera Club (Ark.)
 Los Angeles Camera Club
 Miniature Camera Club of Chicago
 Miniature Camera Club of Detroit (Mich.)
 Miniature Camera Club of New York
 Miniature Camera Club of Oakland (Calif.)
 Miniature Camera Pictorialists of Los Angeles
 Minneapolis Camera Club (Wisc.)
 Monterey Peninsula Camera Club (Pacific Grove, Calif.)
 Montreal Camera Club (Canada)
 Nashville Camera Club (Tenn.)
 Niagara Falls Camera Club (N. Y.)
 Norfolk Photographic Club (Va.)
 Oak Park Camera Club (Chicago)
 Omaha Camera Club (Nebr.)
 Orange County Camera Club (Huntington Beach, Calif.)
 Oregon Camera Club (Portland, Ore.)
 The Pack Rats (Pasadena, Calif.)
 Paramount Studios Camera Club (Glendale, Calif.)
 Peoria Photo Forum (Ill.)
 Photographic Guild of Philadelphia
 Photographic Society of Bangalore (India)
 Photographic Society of San Francisco
 Photon Camera Club of Champaign (Ill.)
 Photo Pictorialists of Milwaukee (Wisc.)
 Photo Pictorialists of Springfield (Mass.)
 Pictorial Photographers of America
 Pictorial Photographers of Victoria (Canada)
 Redlands Photo Pictorialists (Calif.)
 Regina Y.M.C.A. Camera Club (Canada)
 Riverside Camera Club (Calif.)
 San Jose Camera Club (Calif.)
 Schenectady Photographic Society
 Solano Camera Club (Fairfield, Calif.)
 Stamford Camera Club (Glenbrook, Conn.)
 Suburban Camera Club of Cincinnati (Ohio)
 Syracuse Y.M.C.A. Camera Club
 Taft Camera Club (Calif.)
 Telephone Camera Club of Manhattan
 Toledo Camera Club (Ohio)
 Toronto Camera Club (Canada)
 Washington Pictorialists (D. C.)
 Westchester Camera Club (N. Y.)
 Whittier Camera Club (Calif.)

*Denotes clubs competing in December Competition

Club Notes

Genesis of a Prize Winner

Mr. Nowell Ward recently won the \$1500 grand award in Eastman's National Amateur contest. The following communication from him is printed because of the interesting sidelights which it gives, and because we are proud that Camera Craft publications have been of assistance to Mr. Ward in the success he has achieved.—Ed.

Mr. dear Mr. Mortensen:

I wrote to you sometime ago expressing my appreciations for the help I had gained through your publications, "Projection Control" and "Pictorial Lighting". Since that time I have also acquired your "Monsters & Madonnas", which I avidly devoured and which I use as a sort of photographic "Bible".

This is not only due to the quality of the pictures and the instructions gained from the book, but also because of the fine philosophy and humor reflected in its pages. It recalls to me Robert Henri's fine book, "The Art Spirit".

Your "basic light" has given me a foundation upon which I have built many a picture which would otherwise have been a "flop".

I used the modified basic light in the picture "Daydream", which this week won both the first prize and grand award, totalling \$1500, in Eastman's National Amateur Contest, and I feel that it was due, in great part, to your teachings.

I assure you that I shall continue to be one of your most devoted disciples, and as my late friend Frank Harris would say, "This comes from the heart".

Sincerely yours,

Nowell Ward.

The Print Hanging Problem

Dear Mr. Young:

I read with interest Mr. Barrett's article on "Solving the Print Hanging Problem" in November Camera Craft.

The system which he mentions is an excellent but not a new one, as we have used it at the Newark Camera Club for

several years. In fact, one of the illustrations which accompanied my article in your issue of April, 1932 (page 167) shows its installation in the exhibition room of our then new club home.

My letter is in no way intended to claim originality for the scheme, which was suggested to us by fellow member Harrie V. Schieren, but rather to recommend its adoption by other camera clubs, as it greatly facilitates the hanging, showing and removal of prints under glass, and should be welcomed by exhibition committees everywhere, who know full well the many disadvantages of other and older systems.

Very truly yours,
W. L. Woodburn,
Newark Camera Club, Inc.

Willard D. Morgan Joins Life Staff

Willard D. Morgan, for many years the popular manager of the Leica Dept. for E. Leitz, Inc., has just announced that he has joined the staff of the new picture magazine, *Life*, which is to be published by Time, Inc., and which will have made its initial bow before this is read. In his new position Mr. Morgan will be in charge of collecting pictures from amateur photographers all over the world for use in the new magazine. He writes that he would like to obtain the following information from all interested amateur and professional photographers for his files. Name and address, type of photographic equipment available, types of pictures you are interested in taking, time available for photographic work, and any additional remarks of interest. The publication of this new magazine opens a tremendous market for the sale of pictures, and photographers should be happy to know that they will have a friend at court in the person of Mr. Morgan. We all extend congratulations and best wishes for every success in his new work.

Address Mr. Morgan c/o *Life*, 135 E. 42nd St., New York, N.Y.

Third International Leica Exhibit

Each year photographers look forward to seeing the International Leica Exhibit which opens up at Radio City, New York City, and then tours to many other cities.

This year The Third International Leica Exhibit definitely shows that photographers are becoming cognizant of the advantages of the Leica and are photographically capitalizing on these characteristics. In connection with the exhibit in Radio City a contest was held, the awards being prizes which will indeed be coveted by Leica owners. It is the Oskar Barnack Medal, a handsomely designed plaque with a picture in relief of the inventor of the Leica. For this purpose the exhibit was divided into three groups, Press, Professional, and General and Amateur photography. To the first prize winner of each group a silver Oskar Barnack Medal was awarded; a bronze Oskar Barnack Medal awarded to the second prize winner, and a third photograph in each group was selected for honorable mention.



After the exhibit closed in New York City it was held in Chicago, from November 14th to 21st. From there it will visit the following cities:

Cleveland, Ohio—Friday, December 4th to Thursday, December 10th, inclusive. Hours: 11:00 A.M. to 9:00 P.M. Hotel Cleveland, Rose Room. Illustrated Leica Lecture: Tuesday, December 8th, at 8:00 P.M. in the Ball Room of the Cleveland Hotel.

Pittsburgh, Pa.—Tuesday, December 15th to Saturday, December 19th, inclusive. Hours: 11:00 A.M. to 9:00 P.M. Roosevelt Hotel, Blue Room. Illustrated Leica Lecture: Friday, December 18th at 8:00 P.M. in the Gold Room of the Roosevelt Hotel.

In each city there will be a local contest in connection with the exhibit, with Oskar Barnack medals awarded to the first and second prize winners and a third photograph selected for honorable mention. Further information can be obtained from E. Leitz, Inc., 60 East 10th St., New York City.

Notes and Comments

New Willoughby Bargain Book

Booklet No. 1036 from Willoughby's, 110 W. 32nd St., New York, N. Y., lists a number of new photographic items of unique usefulness. Running to 52 pages, it covers a wide variety of cameras, equipment and accessories. If you are puzzled about a suitable Christmas gift for a photographically inclined friend, here are hundreds of suggestions. The book is free for the asking. Write today.

Fine Grain Finishing

For those who prefer to have their miniature negatives developed for them the Miniature Photo Lab. Co., 625 Lexington Ave., New York, N. Y., is specializing in fine grain finishing. They also offer enlargements $2\frac{3}{4} \times 4$ " in size from miniature negatives at only 5c each. The firm will gladly send you a price list and convenient mailing bag on request.

New Central Holiday Bargain Book Ready!

A special Holiday Bargain Book, of unique interest to amateur and professional photographers everywhere, has just been issued by the Central Camera Company, 230 South Wabash Avenue, Chicago, Illinois, according to J. L. McCoy, Manager of the Mail Order Department.

The new free Central Holiday Bargain Book also offers the Royal Greeting Card Outfit complete for only \$1.95 which enables you to individualize your own Christmas cards, using your own negatives of yourself, your family or any other subject you consider suitable.

The Mail Order Department of the Central Camera Company has made special arrangements to give you unusually prompt service for Christmas delivery. Write now for a free copy of Central's new Holiday Bargain Book, which lists hundreds of Christmas gift ideas in still and moving picture equipment, lenses, film, in fact, everything photographic. Address your inquiry to the attention of Mr. J. L. McCoy, Manager of the Mail Order Department, Central Camera Com-

pany, 230 South Wabash Avenue, Chicago, Illinois. Please mention the name of this magazine.

Agfa Announces New Amateur Darkroom Outfit

A new darkroom outfit for amateur photographers who wish to develop and print their own films has been announced by Agfa Ansco Corporation of Binghamton, N. Y. This latest addition to the line of Agfa Ansco photographic materials provides all necessary equipment and materials for the beginner at the attractive low price of \$2.85.

Included in the outfit are: three extremely durable "Arcolite" 4×6 inch trays, one 4-ounce glass graduate, one glass stirring rod, one 10-watt photographic ruby lamp, one 4×6 inch printing frame, two wooden film clips, 3 tubes of Agfa M-Q Developer, one 8-ounce can of Agfa Acid Hypo, one 2-dozen package of Agfa Convira paper and an instruction book giving full directions.

The Agfa Darkroom Outfit No. 1 will be available at all photographic dealers after the first of November.

Bee Bee All-Metal Enlarging Easel

Have you got easel trouble? Then let us urge you to investigate the merits of the newly introduced Bee Bee All-Metal Enlarging Easel. Easy to use, precise, and substantially built, this new all-metal easel offers for the first time complete protection against the annoyances heretofore experienced by photographers when using easels wholly or partly made of wood. Inaccuracies formerly caused by the warping or splitting of wooden parts are, of course, entirely eliminated. Inner margins are controlled simultaneously with one lever. Extremely wide, sliding clamps offer rigid support for the $1\frac{1}{2}$ " masking bands. Suitable for use with all enlargers.

8 x 10".....\$14.00

11 x 14"..... 18.00

Distributed by Burleigh Brooks, 127 West 42nd Street, New York City.

Morgan to Palm Springs

The Morgan Camera Shop of Hollywood has opened a branch store in Palm Springs Calif., for the convenience of camera fans at the desert resort this winter. A complete line of Leica, Contax, 8 and 16mm, movie

cameras have been stocked and a fast developing and finishing service is in effect between the branch and the Hollywood laboratory, where Morgan Supersoup, extra fine-grain developer, is used exclusively on all miniature camera film.

Our Book Shelves

U. S. Camera 1936. Published by William Morrow & Co., of New York. Edited by T. J. Maloney. 208 pages, 8¾"x11¾", spiral bound, price \$2.90.

This second annual edition of U. S. Camera contains approximately 200 black and white reproductions in Beck Gravure, plus 16 natural color pictures printed by Condé Nast. M. F. Agha contributes an amusing and satirical commentary on photographic aesthetics; editor T. J. Maloney tells the story of how the book was compiled, and Edward Steichen writes a foreword under the title "Photographs?" Aside from these brief essays the pictures speak for themselves. They are loosely grouped under the headings Illustration, Portrait, Pictorial, Miniature, and Scientific-Aerial-News. All fields of photography are well represented with the possible exception of the romantic school of pictorial photography. Since this type of work dominates most of the other photographic annuals there is no point in insisting that it should have greater representation here. That this book has achieved an astounding popularity is proved by the fact that the publishers sold out an edition of 25,000 copies about a week after publication date. This is beyond a doubt the record sale for a photographic book. This does not mean that it is now too late for you to obtain a copy. Your dealer will most likely still have copies on hand, but it does mean that you must buy without delay or risk disappointment.

The Body Beautiful, Volume Two. Published by the Dodge Publishing Company, New York. 88 pages, 8¾"x11¾", spiral bound, price \$3.00.

This is the second annual edition of this title. The present volume contains 88

studies of both male and female bodies reproduced by photogravure. We are happy to say that there is a noticeable improvement in the quality of the pictures shown in this volume over those of last year. There are more photographers represented than formerly which is a step in the right direction which we hope will be carried further in volume three. Editor Heyworth Campbell shows a readiness to include a considerable number of pictures which might be described as experimental in nature, or at least as departures from the conventional type of figure study. This adds greatly to the interest of the volume for the serious student, for the bulk of this work is not shown either in the salons or in other publications. It would be an easy matter to criticize individual pictures, we have rarely seen anything in such thoroughly bad taste as number 36 for example, but as a whole the volume is thought provoking and indicative of many interesting trends in this field of work, and from that standpoint alone well worth owning.

Pose Please, by Samuel Bernard Schaeffer. Published by Alfred A. Knopf, of New York. Page size 9x12", spiral bound, price \$3.50.

This book contains approximately 192 photographs made expressly to assist the student of posing, whether he be a free hand artist or a photographer. Mr. Schaeffer has grouped his subjects under the following headings: Full Figure, Torso, Head, Hands, Feet, and Infants and Children. Each group of studies is introduced by brief text in which the author, who is also the photographer, describes the salient characteristics of the group of poses which follow. The book then may be considered

as a collection of good poses, offered to the student so that he may study the beauty of the rhythms and patterns which may be created from the human body.

Composition and Color in Photography, by Avenir Le Heart. Published by Ver Halen Publishing Corp., of Hollywood. 6x8½", 93 pages, paper bound, price \$1.00.

Composition is a subject which has always appeared mysterious and forbidding, especially to the beginner in photography. For those who are just developing an interest in this subject Mr. Le Heart offers a very simplified exposition of the fundamental principles which govern good composition. He first gives the main geometric forms into which arrangements fall and then proceeds to point out by specific examples how these forms appear in various types of pictures, landscapes, marines, portraits, etc. This book contains little of interest for the advanced photographer, but should prove quite helpful to the beginner.

The Year's Photography. Published by Royal Photographic Society, of London. Page size 7¼x9½", paper bound, price \$1.25.

For us at least, the feature which distinguishes this annual publication of the Royal Photographic Society from all other annuals is the fine group of natural history subject which it always contains. You will find in this volume the finest pictures of birds and animals to appear in any book, and one look at them will convince the most skeptical that this is a fine field for camera work. There is also, of course, a large group of strictly pictorial work, all of the pictures being selected from the annual exhibition of the society, which is universally recognized as being one of the finest exhibitions of photography held anywhere. J. Dudley Johnston, Hon. F.R.P.S., contributes an interesting discussion of the pictorial work while others discuss the Scientific, Natural History, and Lantern Slide subjects contained in the exhibition.

Photography Year Book. Edited by T. Korda, published by the Cosmopolitan Press Ltd., of London. 464 pages, 9½x12", cloth bound, price \$8.00.

The sheer size of this book is astound-

ing. It contains 1,063 pictures from more than 550 photographers. But quality has not been sacrificed to quantity. The reproduction quality is good and the editor has done a fine job indeed in collecting such a large number of fine pictures from all over the world. Every conceivable type of picture is shown in profusion, and beyond that there are representative examples of photographs in use. That is, there are examples of photo-murals, photo-posters, photographic book jackets, magazine and newspaper covers, catalogues, etc. Beyond all others this annual can truly claim to present an accurate cross-section of every kind of photographic endeavor.

Elementary Photography, by C. B. Neblette, F. W. Brehm, and E. L. Priest. Published by The MacMillan Co., of New York. Distributed by Eastman Kodak Co. 253 pages, 5½x8", cloth bound, \$1.00.

Here is a book written for the beginner in photography, by three eminent authorities on the subject. Each of these men have had much experience as teachers of photography, and that experience enables them to explain each aspect of the work in exceptionally clear and understandable fashion. Because the book is designed primarily to accompany instruction in secondary schools and clubs it begins with a description of the construction and use of the pinhole camera. This type of camera being used at the beginning at least of many school courses to eliminate the necessity of purchasing camera equipment. The book however is equally well suited for individual self-instruction, and if the reader already has camera equipment he need only skip the chapter on the pinhole camera.

Universal Photo Almanac and Market Guide. Published by the Falk Publishing Company, of New York. 180 pages, 5x9", paper bound, price \$1.00.

Here is a newcomer to the field of photographic annuals which combines under one cover a variety of features. There are seven articles, a pictorial section of 19 pictures, a classified list of markets for photographs extending over 47 pages, and a section devoted to formulas. The volume is designed primarily for those interested in camera journalism and the text is con-

cerned for the most part in pointing out opportunities for the sale of pictures. The editors have succeeded in including a surprising amount of useful and helpful and practical information between the covers of their book. You will get your money's worth and then some.

Camera Journalism with the Miniature Camera, by George W. Hesse. Published by Fomo Publishing Co., of Canton, Ohio. 67 pages, 5x7", paper bound, price \$0.75.

In this little volume Mr. Hesse gives a clear, concise, and practical account of how the miniature camera can best be utilized to bring some income to its owner. The popularity of the candid type of picture in the press of the country is growing by leaps and bounds, and consequently it would appear that the alert minicam is in an excellent position to cash in. Mr. Hesse will tell you all about the best procedures to follow.

Ski and Camera, by Dr. Paul Wolff. Published by the Ruthenberg Color Photography Co., of Hollywood. 93 pages, 8½x10½", spiral bound with cloth covers, price \$3.00.

This volume is made up of 76 thrillingly beautiful winter pictures made in the Alps by that famous exponent of the miniature camera, Dr. Paul Wolff. Each picture is technically superb, and is beautifully reproduced. In his text, which is supplied both in English and German, Dr. Wolff discusses the special problems encountered in this type of photography with a miniature camera, and makes many a helpful and illuminating point. A very beautiful volume and one which any photographer should be happy to own.

Ski Tracks, edited by Charles and Percy Olton. Published by William Morrow and Company, of New York. 130 pages, 7¾x9½", cloth bound, price \$3.00.

This is a book which is intended primarily for the ski enthusiast. It imparts instruction in the art of skiing by means of photographs with appropriate captions. In so doing it incidentally shows a large number of very exciting action pictures of skiing, so that the book is very interesting to the photographer whether he happens to be a practitioner of skiing or not. In all the book contains 190 action shots,

beautifully reproduced in photogravure. Take a look at it next time you pass your favorite book store.

Color Cinematography, by Major Adrian B. Klein. Published by American Photographic Publishing Co., of Boston. 350 pages, 5¼x8½", cloth bound, price \$7.00.

Color Cinematography by Major Adrian Bernard Klein is a very complete and up to date exposition of color photography as applied to motion pictures. It gives a fine historical chronology of the various processes that have been used, a good, easily understood description of the theoretical basis for color photography, and a thorough discussion of the two main types of color films, additive and subtractive. Many illustrations, both photographs and drawings, of the various types of optical systems that have been and are being used to make two color and three color negatives are included. The author has concentrated on describing the processes in use at the present time and evaluating their advantages and limitations. He ends with a prognostication of what may become the most satisfactory method of producing theatrical color films, through the use of a direct color "negative" made by the Kodachrome principle with copies made on Gasparcolor film.

How To Write A Movie, by Arthur L. Gale. Published by The Brick Row Book Shop, of New York. 199 pages, 5¼x8", cloth bound, price \$2.00.

This new publication is a handbook of film plans designed to aid amateur and non-theatrical movie makers. Written by the editor of **Movie Makers**, organ of the Amateur Cinema League, it crystalizes the technique of continuity and scenario writing for both silent and sound films in the non-theatrical field. As the author says in a special note, the book will not help anyone to sell a scenario to a professional film producer. Mr. Gale restricts his subject matter to the things that go on in front of the camera and in this he does an excellent job. He covers the elements of continuity and discusses the tools with which the movie maker must work, explaining the methods of production of short subjects and photoplays in both silent and sound film.

•• Classified Advertisements ••

OUTFITS FOR SALE

◆Richard Verascope 7x13 (6x13), Krauss Tessar F:4.5 lenses, excellent condition, only \$65.00. Also Heidoscope 45x107, Heidoscope F:4.5 Anastigmats, with accessories for \$75.00. John Kovar, 628 Montgomery St., San Francisco, Calif.

◆5x7 Multiple Camera with stand \$50.00. 8x10 View Camera with lens and six holders \$25.00. 5x7 View Camera with lens and tripod \$15.00. 7 1/8 inch Xenar F:4.5 in bbl., \$30.00. Want Enlarger. Jesse Rorabaugh, Beatrice, Nebr.

◆Two repeating backs for color photography. Duralumin 3x4 negatives; with filters; nine metal film holders. Wooden 5x7; spring action; no filters; three wooden film holders. Bargain — write for details. C. B. Barrett, 2193 Fillmore St., San Francisco, Calif.

◆Model "D" Leica excellent condition. Hektor F:2.5 lens. Leather case. \$100.00. Albert Jurs, 304 Pacific Ave., Piedmont, Calif. Tel. HU 5613.

◆Model "G" Leica Summar F:2, 50 mm., Everready case, brand new, \$195.00. Model "F" Leica Elmar F:3.5, 50 mm., Everready case, brand new, \$145.00. O. W. Mayer, 321 San Carlos, Piedmont, Calif. Phone HUmboldt 2510.

POSITIONS WANTED

◆Experienced young woman age 20 wishes permanent position in western studio coloring and retouching. Used to high quality negatives and etching and retouching for projection. W. F. W., c/o Camera Craft, 425 Bush St., San Francisco, Calif.

◆Wanted position by an all around photographer and kodak finisher. Will start for a reasonable salary. 17 years experience. Homer S. Wyatt, 1143 So. Catalina St., Los Angeles, Calif. Phone, Fitzroy 3073.

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